

WATER QUALITY OF LAKE WARAMAUG AND SURROUNDING WATERSHED,
LITCHFIELD COUNTY, CONNECTICUT

by Kenneth P. Kulp and David Grason

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations Report 85-4267

Prepared in cooperation with the

LAKE WARAMAUG TASK FORCE
NORTHWEST CONNECTICUT REGIONAL PLANNING AGENCY



Hartford, Connecticut
1992

U.S. DEPARTMENT OF THE INTERIOR

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CONVERSION FACTORS AND ABBREVIATIONS

Multiply inch-pound unit	By	To obtain metric unit
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
pound (lb)	0.4536	kilogram
acre	0.4047	hectare
mile (mi)	1.609	kilometer
square mile (mi ²)	2.590	square kilometer
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second
ton per day (ton/d)	907.2	kilogram per day
gallon per minute (gal/min)	0.0631	liter per second
pound per acre (lb/acre)	1.1218	kilograms per hectare
degree Fahrenheit (°F)	5/9 (°F-32)	degree Celsius

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ABSTRACT

Lake Waramaug and its watershed in western Connecticut were sampled from March 1977 to March 1978 to develop information for a lake-management plan. Nutrient enrichment has degraded the lake water quality, resulting in an increased algal population in recent years. Chemical analyses of surface-water inflow, ground-water inflow, and atmospheric deposition in the watershed indicate that surface-water inflow at the northeastern corner of the lake is the major source of nutrients discharged to the lake. Atmospheric deposition contains 0.01 to 0.47 milligrams per liter total phosphorus and 0.52 to 3.2 milligrams per liter total nitrogen. During the 7.3-month period of investigation, atmospheric deposition contributed 61,400 pounds of nitrogen and 3,150 pounds of phosphorus to the lake's watershed. Nutrient concentrations in ground water were relatively low, with total phosphorus ranging from 0.008 to 0.14 milligrams per liter.

Lake bottom materials contain high concentrations of nitrogen and phosphorus which seem to be released into the hypolimnion when anaerobic conditions develop. These anaerobic conditions exist in the hypolimnion during most of the summer when the lake develops strong thermal stratification. The ultimate fate of these nutrients was not determined, although the nitrogen and phosphorus seem to be confined to the hypolimnion during the summer stratification.

During the summer, the dominant phytoplankton in the lake are blue-green algae. During the spring and fall, golden-brown algae are the dominant phytoplankton. No severe algal blooms occurred in the lake during this investigation.

INTRODUCTION

Lake Waramaug, in western Connecticut, has had increased algal populations in recent years, indicative of nutrient enrichment. Norvell and Frink (1975) identified the lake as one where accelerated eutrophication has occurred during the past 35 to 40 years. In a subsequent report by the King's Mark Resource Conservation and Development Area's Environmental Review Team (1976), it was recommended that a more extensive investigation of the lake be made to define specific causes and sources of the accelerated eutrophication.

In March 1977, the U.S. Geological Survey, in cooperation with the Lake Waramaug Task Force of the Northwestern Connecticut Regional Planning Agency, initiated an investigation of selected water-quality characteristics in Lake Waramaug and its watershed. The purpose of this report is to present data from this investigation that will be used in conjunction with the information obtained from other studies in the development of a lake-management program.

The main objectives of the investigation were to identify the sources of the nutrients which are causing the lake's accelerated eutrophication, to obtain a water-quality baseline of the lake throughout the growing season, and to determine areal and temporal variations in nutrient concentrations within the lake and its watershed. To achieve these objectives, samples were collected from (1) the lake, (2) surface-water inflow and outflow, (3) selected ground-water sources, and (4) atmospheric deposition within the watershed, and analyzed for chemical and physical characteristics.

Acknowledgment is made to Carol Youell and William H. Vogel, Jr., of the Lake Waramaug Task Force, who assisted in the collection of data during this investigation.

DESCRIPTION OF THE STUDY AREA

Lake Waramaug is located in Litchfield County in western Connecticut in the townships of Kent, Warren, and Washington (fig. 1). The lake has a watershed of 14.07 mi² (square miles), of which about 66 percent is forested, 10 percent is agricultural, 5 percent is wetland, 5 percent is residential or commercial, and the remaining 14 percent is composed of fields, recreational areas, or open-water (King's Mark, 1976). The land immediately adjacent to the lake is primarily residential, with the exception of that area along the northwestern end which is encompassed by Lake Waramaug State Park and the Arrow Point area. This area consists mainly of forests and fields.

Lake Waramaug is of glacial origin, and is the second largest naturally formed lake in the State. It is used primarily for recreational purposes, including boating, fishing, and swimming. The primary inflow is Lake Waramaug Brook, locally known as Sucker Brook, which discharges into the northeastern corner of the lake. Several small streams enter at various points around the lake, some of which are intermittent. The outflow is located at the southeastern corner and forms the East Aspetuck River, which is a part of the Housatonic River drainage system.

The Lake Waramaug watershed is underlain by the Waramaug Formation, which consists of mica-quartz gneisses and schists, feldspathic mica quartzites, and mica quartzites (Gates and Bradley, 1952). The surficial geology of the area is mainly glacial till, with numerous rock outcrops and some small alluvial fan deposits near the the lakeshore (Colton, 1969).

Selected physical characteristics of the lake are presented in table 1. The bathymetry and aquatic vegetation of the lake are described by Kulp (1981).

Table 1.--Selected physical characteristics of Lake Waramaug
[King's Mark Environmental Review Team, 1976]

Surface area	672 acres
Maximum depth	40 feet
Mean depth	22.1 feet
Volume	647 × 10 ⁶ cubic feet
Average retention time	302 days

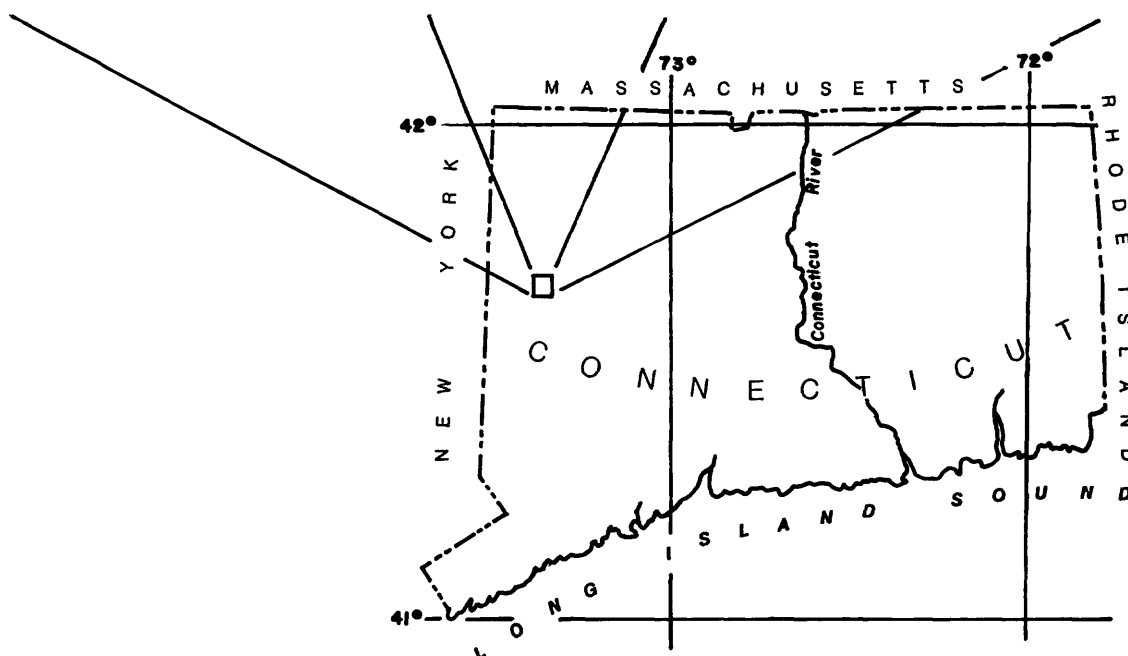
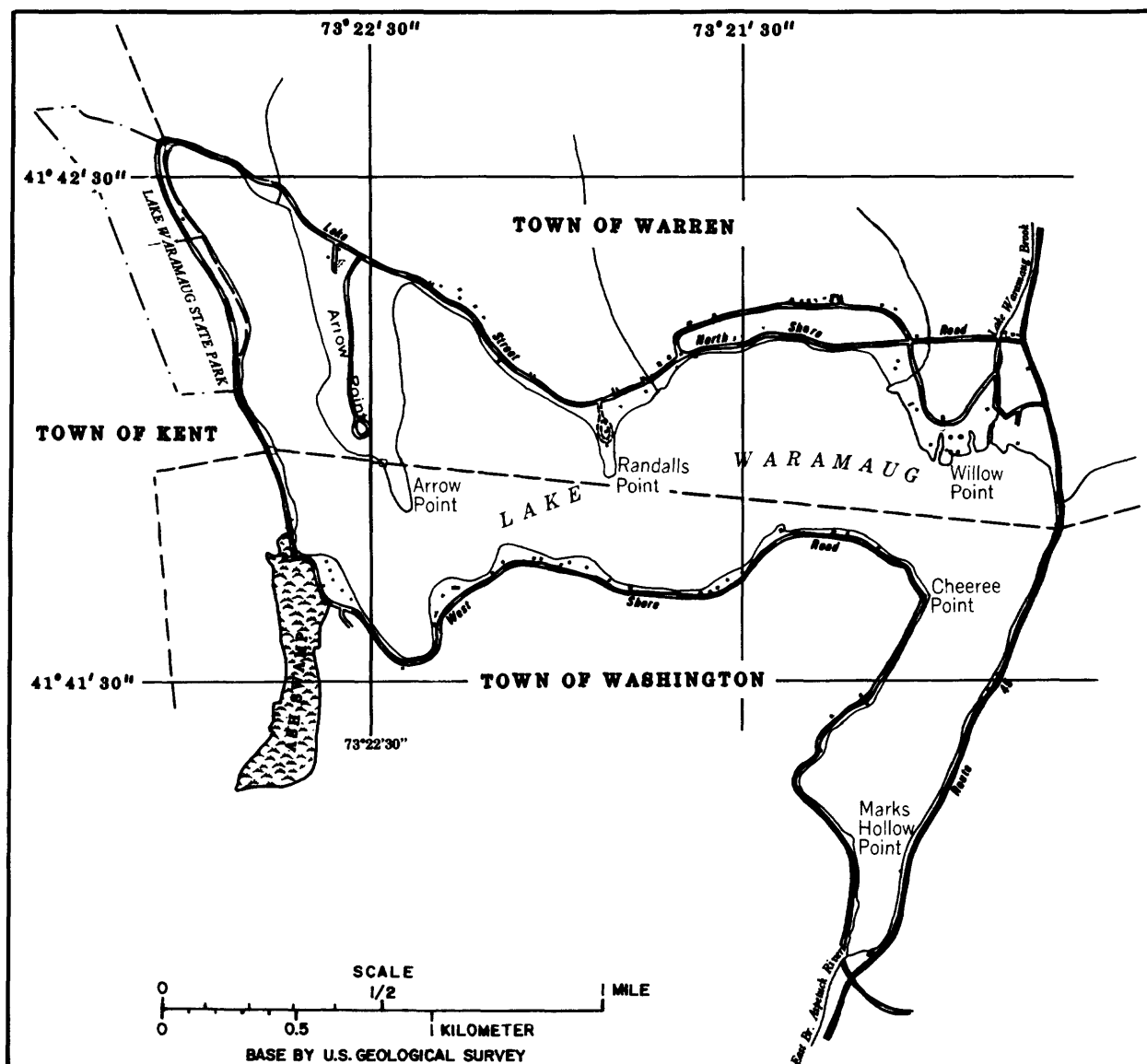


Figure 1.--Location of study area.

DATA COLLECTION

Because data collection consisted of sampling various systems of the lake and its watershed, separate programs were required. Unless otherwise indicated, the techniques used for the collection and analysis of chemical samples were in accordance with those described by Brown and others (1970). The algal growth potential determinations and bacteriological analysis were done by the techniques described by Greeson and others (1977).

Surface-Water Inflow Sampling

Twenty-seven surface-water sites were sampled in the lake's drainage. The location of these sampling sites is shown in figure 2; descriptions are given in table 2.

Discharge measurements were made at each site at the time of the sampling, using techniques described by Buchanan and Somers (1969). At some sites where flow was very low, measurements were made by timing discharge into a graduated container. Field determinations of water temperature, specific conductance, pH, dissolved-oxygen concentration, fecal coliform, fecal streptococcus, and total coliform bacteria were made at each site. Water samples were analyzed by the U.S. Geological Survey Central Laboratory for constituents that included dissolved solids, organic carbon, suspended sediment, nitrogen, phosphorus, and algal growth potential.

Specific amounts and dates of precipitation during the sampling period are given in table 3. The initial sampling of surface-water inflow took place on March 14, 1977. This coincided with a rain storm which began on March 13, and continued through March 14. Melting snow, in conjunction with the storm, caused streamflow to be high. The second sampling was conducted on June 1 and 2, coinciding with a light rain following a long, dry period. Streamflow was low at the time of sampling, and some smaller streams were dry. The third sampling was conducted on June 7, when weather and streamflow were similar to that of the June 1 and 2 sampling.

On September 20, the fourth sampling was conducted during a light rain which had begun on the previous day. Streamflow and runoff were again low. Based on an evaluation of previously collected data, laboratory analyses were modified at this time. Dissolved-solids concentration was not determined because a satisfactory correlation with specific conductance had been established, and analysis of orthophosphate was replaced by analysis of dissolved phosphorus, which was felt to be more directly related to algal growth in the lake. Analysis of temperature, pH, dissolved-oxygen concentration, bacteria, algal growth potential, and nitrogen were reduced to once per site.

The fifth sampling was conducted on October 20, following several days of rain when streamflow was above average. The sixth sampling was conducted during heavy rain on November 8, when streamflows were again high.

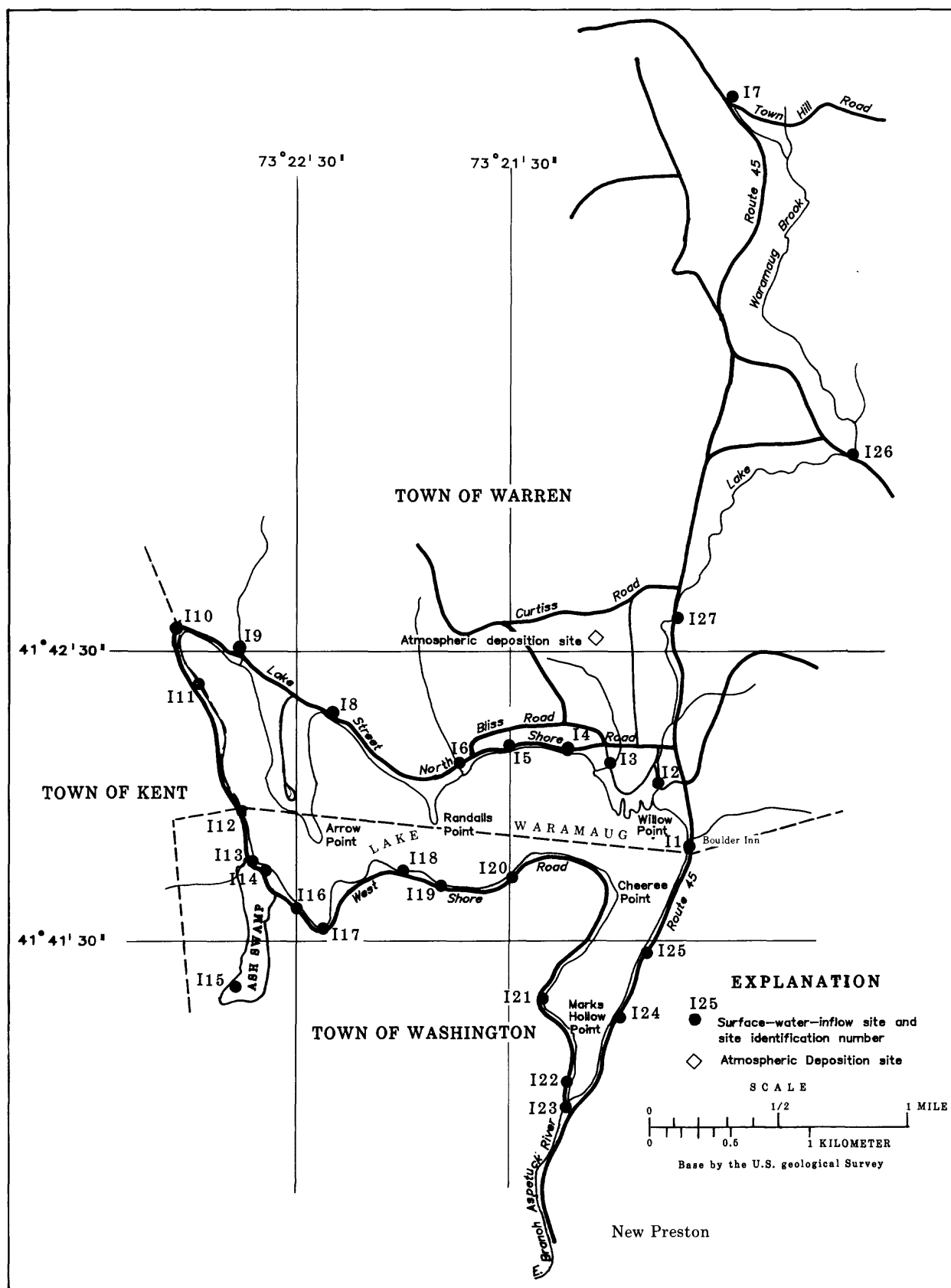


Figure 2.--Surface-water inflow and atmospheric deposition sampling sites.

Table 2.--Surface-water inflow sampling site identification and descriptions

Site number	USGS station number	Latitude	Longitude	Description or remarks
I1	414151073204000	41°41'51"	73°20'40"	Small unnamed brook just south of private road leading to Boulder's Inn
I2	01201030	41°42'02"	73°20'50"	Lake Waramaug Brook near New Preston at bridge on private drive
I3	414207073210400	41°42'07"	73°21'04"	Small unnamed brook at bridge on private road near Warrentown beach
I4	414210073211800	41°42'10"	73°21'18"	One of several culverts under North Shore Road that carries water to the lake during heavy runoff
I5	414210073213000	41°42'10"	73°21'30"	Largest of several culverts under North Shore Road that carries water to the lake during heavy runoff
I6	414206073214500	41°42'06"	73°21'45"	Small unnamed brook just west of Bliss Road and North Shore Road junction
I7	01201010	41°43'23"	73°20'30"	Lake Waramaug Brook at Warren at concrete pipe culvert under Town Hill Road
I8	414210073221200	41°42'10"	73°22'12"	Largest of several culverts under Lake Street just east of Arrow Point that carries water to the lake during heavy runoff
I9	414229073224500	41°42'29"	73°22'45"	Unnamed brook just west of Arrow Point
I10	414234073230300	41°42'34"	73°23'03"	Small unnamed brook flowing into the northwestern corner of the lake
I11	414223073225900	41°42'23"	73°22'59"	Small unnamed brook flowing from the middle of Lake Waramaug State Park
I12	414157073224700	41°41'57"	73°22'47"	Culvert flowing under road at the Washington-Kent town line. Culvert flows only during heavy runoff
I13	414146073224300	41°41'46"	73°22'43"	Culvert from Golf Course Hill under West Shore Road. Flows only during heavy runoff periods
I14	414145073224000	41°41'45"	73°22'40"	Ash Swamp at outlet to lake
I15	414120073224700	41°41'20"	73°22'47"	Backwater of Ash Swamp
I16	414136073228900	41°41'36"	73°22'29"	Small culvert under West Shore Road. Flows only during heavy runoff
I17	414133073222300	41°41'33"	73°22'23"	Small unnamed brook entering the southwestern corner of the lake
I18	414144073215900	41°41'44"	73°21'59"	Small culvert under West Shore Road. Flows only during heavy runoff
I19	414141073215000	41°41'41"	73°21'50"	Small culvert under West Shore Road. Flows only during heavy runoff
I20	414143073213100	41°41'43"	73°21'31"	Small culvert from Tinker Hill under West Shore Road. Flows only during heavy runoff
I21	414119073212200	41°41'19"	73°21'22"	Small culvert flowing under West Shore Road at boat landing
I22	414102073211400	41°41'02"	73°21'14"	Flow from rock cliffs above West Shore Road
I23	01201050	41°40'57"	73°21'15"	East Aspetuck River at New Preston at lake outlet
I24	414121073205800	41°41'21"	73°20'58"	Flow from rock cliffs above State Route 45
I25	414133073205000	41°41'33"	73°20'05"	Flow from rock cliffs above State Route 45
I26	01201020	41°43'10"	73°19'56"	Lake Waramaug Brook near Warren at State Route 341
I27	414237073204600	41°42'37"	73°20'46"	Lake Waramaug Brook at State Route 45

Table 3.--Precipitation data, U.S. Geological Survey station 414232073210900
[Data provided by William H. Vogel, Jr.]

	Precipitation in inches										
Day	Mar. 1977	Apr. 1977	May 1977	June 1977	July 1977	Aug. 1977	Sept. 1977	Oct. 1977	Nov. 1977	Mar. 1978	Apr. 1978
1				0.42				0.70			
2								0.10			
3		0.60				0.25				0.60 ^a	
4	0.25										
5	0.60	0.70	0.65			0.65					0.15
6				0.50				0.10			0.10
7						1.00					
8		0.10			0.15				1.15		
9			1.25					1.10	0.25		
10				1.10		1.00		0.10			
11						0.10			0.25		
12						0.30					0.20
13	0.85				0.35		0.55				
14	0.70					0.20		0.50	0.30	0.60	
15	0.10							0.15		0.10	
16										6.00 ^a	
17					0.20	0.30	0.80	0.25	0.25		
18	0.60 ^a							0.25			0.10
19	0.20 ^a			0.80			0.25	0.15			0.90
20	0.20 ^a						0.70	0.65			0.10
21				0.50							
22									0.15	0.10	
23	1.60 ^a										
24		1.40				0.15	0.65		0.10		
25					1.20		0.50				
26							1.40	0.20	0.70	0.40 ^a	
27								0.10		0.30	
28											
29	0.40			0.20							
30											
31	0.10										

^a Approximate value (precipitation was snow which was converted to approximate rainfall equivalent by dividing by 10).

In the spring of 1978, after all the collected data were evaluated, a final sampling was planned. Because phosphorus was thought to be the most important constituent, the sampling was designed to measure its concentrations extensively at several sites during a spring freshet. Sites I2, I7, I9, and I26 (table 2) were selected for extensive sampling. Staff gages were installed at these sites to measure water stage at the time of sampling and to develop a stage-discharge relation. Sampling was conducted at these sites from March 20 to 31, 1978, coinciding with a period of light rains and some snow. On March 27, the small amount of snow still on the ground was melted by rain, creating high streamflow. During this day, most sites were sampled, and multiple samples were collected at the four extensive sampling sites. The samples were analyzed for phosphorus concentration, algal growth potential, and suspended-sediment concentration. Temperature, pH, and specific conductance were measured on site at the time of sampling.

Atmospheric-Deposition Sampling

One site, near the town of Warren (fig. 2), was established for the collection of wet and dry atmospheric deposition. The samples were collected using a bulk-type sampler, consisting of a polyethylene funnel fitted to a glass bottle. Data collection began April 1, 1977, and continued through November 9, 1977. The first sample was a composite of atmospheric deposition for the entire month of April. Subsequently, samples were collected for analysis after every major rainstorm. For samples collected prior to August 24, 1977, a plastic wool material was placed in the collector to filter out large objects such as leaves and twigs; thereafter, a copper screen was used for this purpose. Laboratory analyses verified that neither of these filter materials contributed significant phosphorus to the sample. The plastic wool may have contributed nitrogen in the range of 0.01 to 0.10 mg/L (milligrams per liter) to the sample. The copper screen had no effect on nitrogen concentration.

All samples were taken from the collector and immediately refrigerated. Specific conductance and pH were determined upon receipt of the samples by the U.S. Geological Survey which in some instances was several days after collection. The samples were subsequently sent to the laboratory for nitrogen and phosphorus analysis. The quantities and dates of precipitation over the collection period were recorded by a local resident, William H. Vogel, Jr. These data are shown in table 3.

Ground-Water Sampling

Fourteen wells and springs in the vicinity of Lake Waramaug and four seepage sources on the lake bottom near shore were sampled to determine the contribution of nutrients by ground water to the lake. The location of these sampling sites is shown in figure 3; descriptions are given in table 4. Samples of ground-water seepage within the lake were collected using the samplers and techniques described by Lee (1977), and were analyzed for nitrogen and phosphorus. Ground-water samples from the wells and springs were also analyzed for these nutrients, and measurements of specific conductance, pH, and temperature were made at the time of sampling.

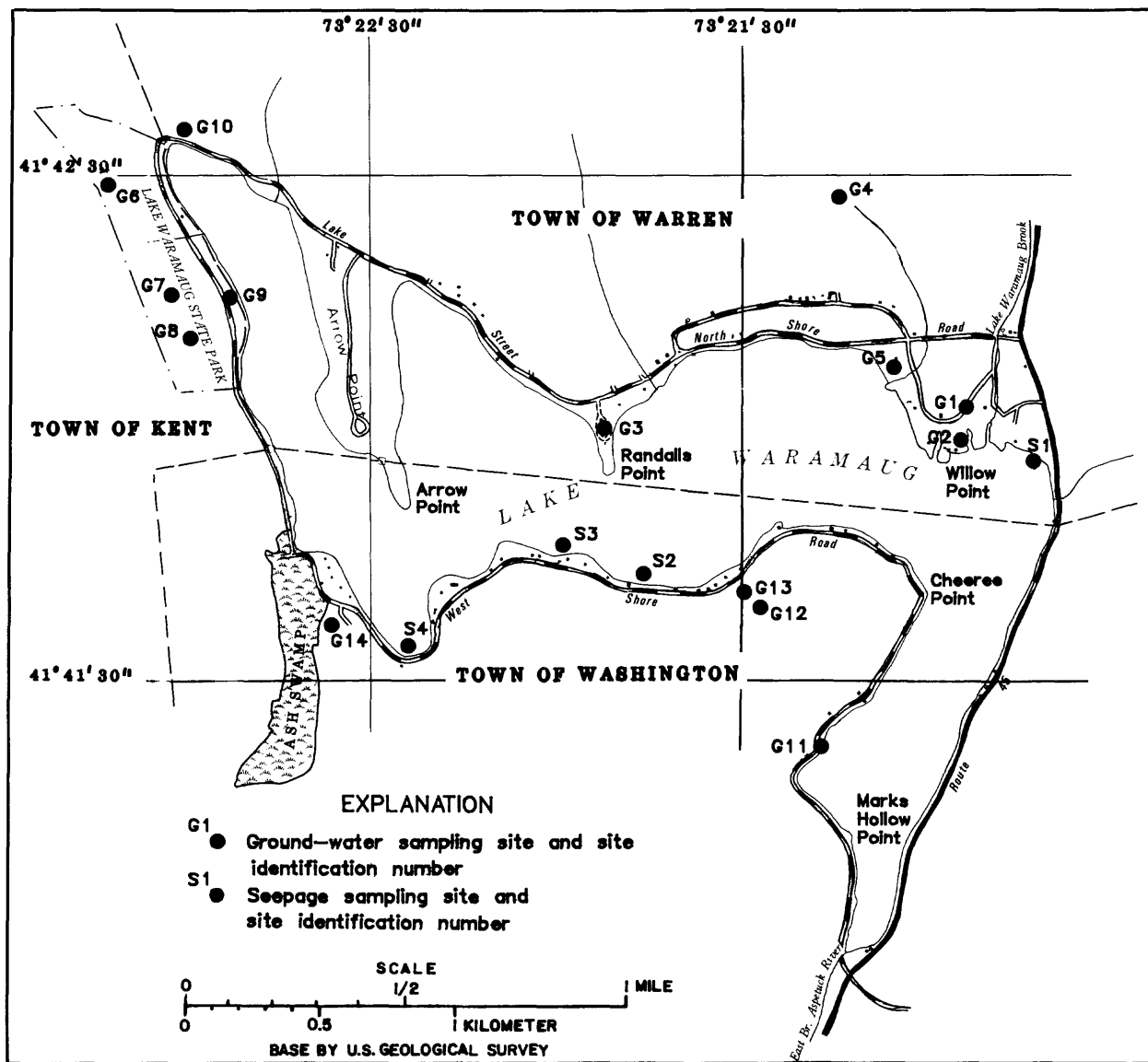


Figure 3.--Ground-water and seepage sampling sites.

Table 4.--Ground-water and seepage sampling site identification and descriptions
[m, meter; $\mu\text{m/s}$, micrometer per second]

Site number	USGS station number	Latitude	Longitude	Description or remarks
Ground-water sites				
G1	414202073205901	41°42'02"	73°20'59"	Dug well with concrete sleeves, approximately 2.5 m deep and 1.0 m in diameter.
G2	414157073205801	41°41'57"	73°20'58"	Dug well, approximately 10 years old. Approximately 2.5 m deep and 1 m in diameter.
G3	414159073215201	41°41'59"	73°21'52"	Dug well with gravel bottom, approximately 2.4 m deep and 1 m in diameter.
G4	414230073212201	41°42'30"	73°21'22"	Spring in pasture. Stone holding tank approximately 1.5 m deep.
G5	414207073210701	41°42'07"	73°21'07"	Dug well with concrete sleeves, approximately 40 years old. Approximately 3.4 m deep and 1 m in diameter. Sand and gravel bottom
G6	414232073231001	41°42'32"	73°23'10"	Drilled well, 66 m deep. In field near showers in Lake Waramaug State Park
G7	414219073230201	41°42'19"	73°23'02"	Drilled well, 34 m deep. Near campsites in Lake Waramaug State Park
G8	414214073230001	41°42'14"	73°23'00"	Drilled well, 36 m deep. In back of campsites in Lake Waramaug State Park
G9	414271073225801	41°42'17"	73°22'58"	Drilled well, 53 m deep. On lakeside of road in Lake Waramaug State Park
G10	414236073225301	41°42'36"	73°22'53"	Artesian well
G11	414122073212001	41°41'22"	73°21'20"	Drilled well approximately 3 years old and 47 m deep. Yield of approximately 10 gal/min. Below 4 m well was drilled through Cambrian rock.
G12	414138073213501	41°41'38"	73°21'35"	Spring with concrete holding tank.
G13	414139073213701	41°41'39"	73°21'37"	Spring approximately 0.6 m deep. Concrete holding tank
G14	414140073224801	41°41'40"	73°22'48"	Dug well, approximately 25 years old, approximately 5 m deep.
Seepage sites				
S1	414155073204300	41°41'55"	73°20'43"	Seepage rate of 3.4 $\mu\text{m/s}$, approximately 8 m from shore.
S2	414142073214200	41°41'42"	73°21'42"	Seepage rate of 0.2 $\mu\text{m/s}$, approximately 6 m from shore.
S3	414146073220000	41°41'46"	73°22'00"	Seepage rate of 0.1 $\mu\text{m/s}$, approximately 12 m from shore.
S4	414156073205000	41°41'56"	73°20'50"	Seepage rate of 0.05 $\mu\text{m/s}$, approximately 20 m from shore.

Lake-Bottom-Material Sampling

On May 4 and 5, 1977, lake-bottom-material samples were collected from 13 points in the lake using a ponar dredge. The locations of these sampling sites are shown on figure 4; descriptions are given in table 5. The samples were analyzed for concentrations of nitrogen, phosphorus, and organic carbon, and particle-size distribution.

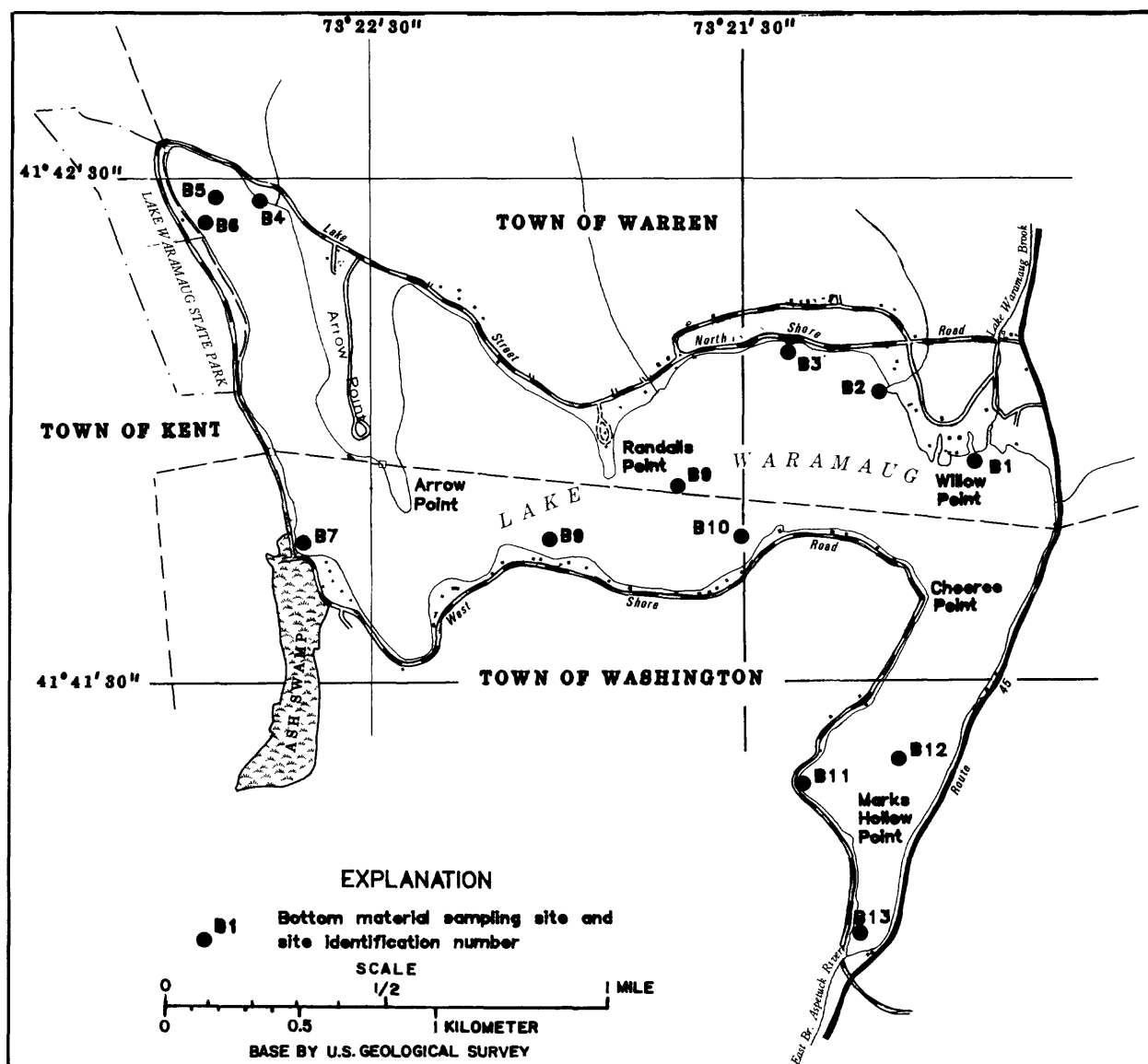


Figure 4.--Lake-bottom-material sampling sites.

Table 5.--Lake-bottom-material sampling site identification and descriptions
[m, meter]

Site number	USGS station number	Latitude	Longitude	Description or remarks
B1	414157073205400	41°41'57"	73°20'54"	At mouth of Lake Waramaug Brook
B2	414205073210900	41°42'05"	73°21'09"	At mouth of small unnamed brook on northeast side of lake
B3	414209073212500	41°42'09"	73°21'25"	Approximately 20 m from shore on northeast side of lake
B4	414225073224500	41°42'25"	73°22'45"	At mouth of unnamed brook at northwest end of lake
B5	414225073225000	41°42'25"	73°22'50"	At site L2, approximately 100 m from shore at northwest end of lake
B6	414225073225700	41°42'25"	73°22'57"	At mouth of brook entering from Lake Waramaug State Park
B7	414145073224000	41°41'45"	73°22'40"	At site L14, at end of pipe connecting to Ash Swamp
B8	414147073215600	41°41'47"	73°21'56"	Approximately 30 m from shore on south side of Lake
B9	414152073214300	41°41'52"	73°21'43"	At site L8, approximately 300 m from Randalls Point
B10	414145073213100	41°41'45"	73°21'31"	Approximately 30 m from shore on south side of Lake
B11	414119073212200	41°41'19"	73°21'22"	At site L21, mouth of culvert entering southeast end of lake
B12	414121073211000	41°41'21"	73°21'10"	At site L14, approximately 200 m from shore at southeast end of lake
B13	414104073211000	41°41'40"	73°21'10"	At site L16, near outflow at southeast end of Lake

Lake-Water Sampling

Initially, lake-water samples were collected at 16 sites. The locations of these sites are shown in figure 5; descriptions are given in table 6. At each site, field measurements of secchi disk transparency, water temperature, pH, specific conductance, and dissolved-oxygen concentration were made at various depths through the water column. Samples were collected at various depths at six mid-lake sites (L2, L5, L8, L11, L14, and L16), using a point sampler. These samples were analyzed for alkalinity, nitrogen, and phosphorus. Samples collected in April and August 1977 were also analyzed for total organic carbon and algal growth potential. Phytoplankton samples were collected at each mid-lake site, and the dominant types were identified.

Lake sampling began on April 4, 1977, and continued until April 13, 1978. Analysis of results obtained through June 1977 indicated that the water quality of nearshore sites was essentially the same as that found in the upper levels of the mid-lake sites. For this reason, the nearshore sites (L1, L3, L4, L6, L7, L9, L10, L12, L13, and L15) were eliminated from the sampling program beginning with the July 1977 sampling. The analysis of orthophosphorus was also eliminated at this time, as it was felt to be of doubtful utility. During the two rounds of sampling in October 1977, analysis of iron concentration was added to the laboratory determinations. The November 16, 1977 sampling was limited to field determinations, because the growing season had ended. The April 13, 1978 sampling was limited to sites L5, L8, and L14, and only the field determinations and analysis for phosphorus were performed. This final sampling took place just after the ice had melted from the lake.

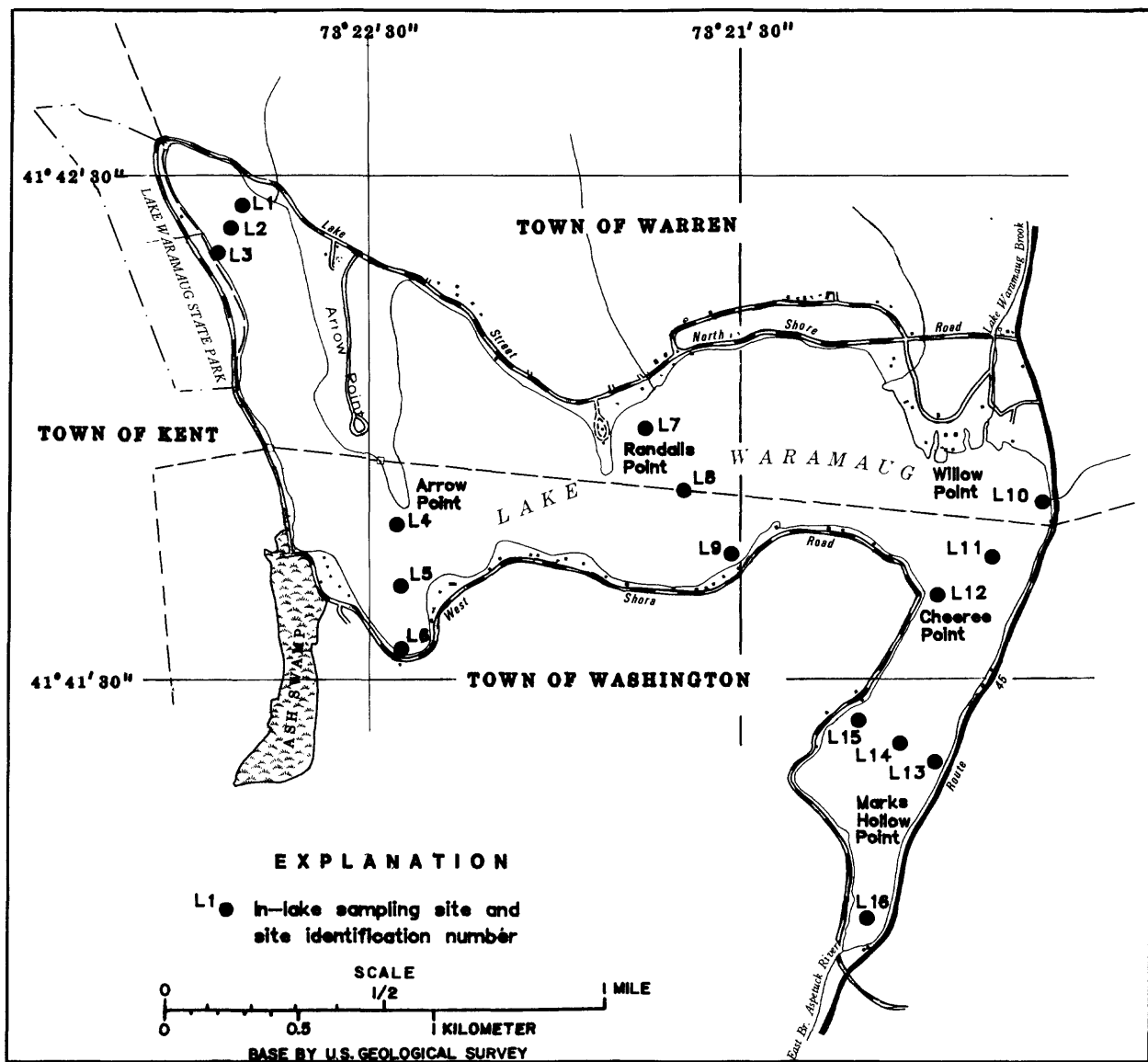


Figure 5.--Lake sampling sites.

Table 6.--Lake sampling site identification and descriptions

Site number	USGS station number	Latitude	Longitude	Description or remarks
L1	414227073224800	41°42'48"	73°22'48"	Field values only. Discontinued in June 1977
L2	414225073225000	41°42'25"	73°22'50"	Field and laboratory values
L3	414224073225500	41°42'40"	73°22'55"	Field values only. Discontinued in June 1977
L4	414149073222400	41°41'49"	73°22'24"	Field values only. Discontinued in June 1977
L5	414144073222400	41°41'44"	73°22'24"	Field and laboratory values
L6	414136073222400	41°41'36"	73°22'24"	Field values only. Discontinued in June 1977
L7	414200073214900	41°42'00"	73°21'49"	Field values only. Discontinued in June 1977
L8	414152073214300	41°41'52"	73°21'43"	Field and laboratory values
L9	414145073213700	41°41'45"	73°21'37"	Field values only. Discontinued in June 1977
L10	414155073205000	41°41'55"	73°20'50"	Field values only. Discontinued in June 1977
L11	414150073205400	41°41'50"	73°20'54"	Field and laboratory values
L12	414144073210100	41°41'44"	73°21'01"	Field values only. Discontinued in June 1977
L13	414121073210100	41°41'21"	73°21'01"	Field values only. Discontinued in June 1977
L14	414121073211000	41°41'21"	73°21'10"	Field and laboratory values
L15	414121073211700	41°41'21"	73°21'17"	Field values only. Discontinued in June 1977
L16	414104073211000	41°41'04"	73°21'10"	Field and laboratory values

RESULTS AND CONCLUSIONS

Surface-Water Inflows

Results of surface-water-inflow analyses are listed in table 7 (at back of report). Fecal coliform and fecal streptococcus bacteria populations were relatively high at sites I2, I3, I4, I6, I11, I14, I19, I26, and I27. These bacteria are typically found in the fecal wastes of warm-blooded animals, and their presence in large numbers in water is indicative of fecal pollution. In general, the ratio of the number of fecal coliform bacteria to that of fecal streptococcus bacteria at these sites was less than 0.7, indicating nonhuman sources, such as dogs, cats, rodents, livestock, and poultry (Geldreich and Kenner, 1969). In some instances, however, the ratios were higher, indicating possible human fecal contamination. Ratios exceeding 2, which indicate a human source of pollution, were found at sites I4, I14, and I19.

In general, the streams along the northeastern shore of the lake have the highest nutrient concentrations and have the highest algal growth potential values. Lake Waramaug Brook, the largest stream entering the lake, flows through this area, and is the largest stream source of nutrients discharging to the lake. Sites I3 and I4, located in the same general area, had consistently high phosphorus concentrations. A large fraction of the phosphorus was in a dissolved form, which is readily available for use by algae. This is reflected in the high algal growth potential recorded at these sites. Although these streams are both small, their contribution of nutrients to the lake is significant.

Sites located along the steeper slopes of the lake's eastern shoreline (I22, I24, and I25) had low pH and specific conductance values, characteristic of the values recorded from the atmospheric deposition samples. Nutrient concentrations were low at these sites, and it seems that the nutrient contribution from these inflows is small and results directly from precipitation.

Nutrient contributions from streams discharging to the western-most finger of the lake generally are low, although site I11 occasionally had moderate algal growth potential values. Because this area of the lake is relatively shallow (approximately 15 feet) and is isolated by Arrow Point, the nutrient loading from these streams, particularly I11, may have significant local impact. In recent years, this area has experienced more algal blooms than other areas of the lake, although none were observed during this investigation.

Results of the March 1978 sampling indicate that the greatest quantity of phosphorus enters the lake during periods of high surface-water flow. Data indicate that sharp increases in phosphorus concentrations occur during the initial rise of the stream. Concentrations of phosphorus begin to decrease gradually, as peak flow is reached and recession begins. For example, data from site I2 (table 7) indicate that on March 26, 1977, when the streamflow was 30 ft³/s (cubic feet per second), the total phosphorus concentration was 0.01 mg/L. Rain increased the streamflow to 245 ft³/s on March 27, and the phosphorus increased to 0.44 mg/L. As streamflow increased to 325 ft³/s, the phosphorus concentration increased to 0.50 mg/L. During the following 2 hours, streamflow remained constant, but the phosphorus concentration decreased to 0.25 mg/L. On the following day, when the streamflow had decreased to 116 ft³/s, the phosphorus concentration was 0.04 mg/L. Similar streamflow-phosphorus relations were observed at the other three intensively sampled sites.

Atmospheric Deposition

The results of chemical analyses of atmospheric deposition are given in table 8. Specific conductance values ranged from 12 to 72 μ S/cm (microsiemens per centimeter at 25 degrees Celsius). Concentrations of the nutrients nitrogen and phosphorus varied, and occasionally were relatively high. Total phosphorus concentrations ranged from 0.01 to 0.47 mg/L and total nitrogen concentrations ranged from 0.50 to 3.2 mg/L. In several instances, the nutrient concentrations found in some of the inflows were similar to those of the atmospheric deposition samples for the same time period. It is possible that a substantial portion of the nutrients found in these streams originated from atmospheric deposition. During the data-collection period, April 1 to November 9, 1977, atmospheric deposition contributed approximately 6.28 lb/acre (pounds per acre) of nitrogen and 0.35 lb/acre of phosphorus. These amounts are equivalent to 61,400 lb (pounds) of nitrogen and 3,150 lb of phosphorus from the atmosphere during this 7.3-month period, which is a significant amount.

Table 8.--Chemical and physical characteristics of atmospheric deposition

[Results are in milligrams per liter (mg/L) except as indicated; $\mu\text{S}/\text{cm}$, microsiemens per centimeter]

Sample collection period	Precipitation quantity (inches)	Specific conductance ($\mu\text{S}/\text{cm}$)	Total nitrogen as N (mg/L)	Total Kjeldahl nitrogen as N (mg/L)	Total nitrate + nitrite as N (mg/L)	Total nitrogen as NO_3 (mg/L)	Total phosphorus as P (pounds)	Total nitrogen as N deposited on lake surface ^{a/} (pounds)	Total phosphorus as P deposited on lake surface ^{a/} (pounds)
04-01-77/									
05-01-77	2.80	35	0.94	0.44	0.50	4.2	0.010	401	4.26
05-01-77/									
05-05-77	.65	22	1.0	.66	.36	4.5	.010	99	0.99
05-05-77/									
05-11-77	1.25	25	1.0	.56	.45	4.5	.110	190	20.9
05-11-77/									
06-02-77	.42	41	3.2	2.4	.78	14	.470	205	30.1
06-02-77/									
06-11-77	1.60	28	.70	.30	.40	3.1	.030	171	7.31
06-11-77/									
06-21-77	1.30	65	2.2	1.1	1.1	9.7	.030	436	5.94
06-21-77/									
07-25-77	2.10	63	1.6	.75	.84	7.0	.024	512	7.68
07-25-77/									
08-10-77	2.90	72	1.7	.68	1.0	7.4	.020	751	8.83
08-10-77/									
08-24-77	1.05	53	1.2	.53	.64	5.2	.090	192	14.4
08-24-77/									
09-13-77	0.55	61	2.2	1.3	.90	9.7	.211	184	17.7
09-13-77/									
09-21-77	1.75	42	1.7	1.1	.63	7.7	.169	453	45.0
09-21-77/									
09-26-91	2.55	19	.82	.51	.31	3.6	.102	318	39.6
09-26-91/									
10-01-77	.70	35	1.5	.94	.53	6.5	.056	160	5.97
10-01-77/									
10-10-77	1.40	13	.64	.52	.12	2.8	.023	136	4.90
10-10-77/									
10-18-77	1.25	34	.57	.33	.24	2.5	.047	109	8.95
10-18-77/									
10-20-77	.80	15	1.1	.46	.65	4.9	.089	134	10.8
10-20-77/									
11-09-77	1.70	12	.52	.34	.18	2.3	.020	135	5.18
04-01-77/	--	--	--	--	--	--	--	4,586	238.51
11-09-77	--	--	--	--	--	--	--		

^{a/} Calculation based on lake surface area of 672 acres.

Ground Water and Seepage

Results of ground-water and lake-seepage sample analyses are given in table 9. Phosphorus concentrations in ground water were greatest at sites G1 and G10, with concentrations of 0.136 and 0.102 mg/L, respectively. Concentrations of phosphorus at other ground-water sites ranged from 0.008 to 0.074 mg/L. Without a more thorough study of ground-water flow to the lake, it is not possible to determine the nutrient contribution of ground water to the lake, although it appears to be minimal, compared to other sources.

With the exception of station S1, lake seepage data showed values similar to those found in bottom waters during the same time period. Based on the limited seepage and other ground-water data collected, seepage does not appear to be contributing a significant quantity of nutrients to the lake.

Table 9.--Chemical and physical characteristics of ground water and seepage

[Results are in milligrams per liter (mg/L) except as indicated; μ S/cm, microsiemens per centimeter; °C, degrees Celsius]

Site number	Date	Specific conductance (μ S/cm)	pH (units) (units)	Temper- ature (°C)	Total nitrite +nitrate as N (mg/L)	Dissolved ammonia nitrogen as N (mg/L)	Total organic nitrogen as N (mg/L)	Total nitrogen as N (mg/L)	Total nitrogen as NO ₃ (mg/L)	Total phosphorus as P (mg/L)
G1	08-25-77	360	5.9	15.0	21	0.00	0.15	21	94	0.136
G2	08-25-77	360	7.6	17.0	.07	.01	.65	.73	3.2	.030
G3	08-25-77	285	6.7	16.0	.06	.01	.14	.21	.93	.014
G4	08-25-77	85	5.8	10.0	1.0	.08	.51	1.6	7.0	.045
G5	08-25-77	390	6.8	14.0	.35	.00	.04	.39	1.7	.043
G6	08-25-77	265	7.7	11.0	.03	.01	.03	.07	.31	.010
G7	08-25-77	250	7.0	13.5	1.1	.00	.00	1.1	4.9	.036
G8	08-25-77	185	6.8	13.0	.07	.00	.02	.09	.40	.014
G9	08-25-77	250	7.6	15.0	.08	.00	.05	.13	.58	.042
G10	08-25-77	87	7.1	13.0	.06	.00	.21	.27	1.2	.102
G11	08-25-77	132	6.6	20.0	.13	.00	.00	.13	.58	.008
G12	08-25-77	62	6.6	14.0	.05	.00	.21	.26	1.2	.046
G13	08-25-77	87	6.9	14.0	.08	.01	.08	.17	.75	.053
G14	08-25-77	295	7.2	15.0	1.4	.00	.16	1.6	6.9	.074
S1	08-02-77	-	-	-	.18	.03	.24	.45	2.0	.032
S2	08-02-77	-	-	-	.02	.21	.74	.97	4.3	.049
S2	08-04-77	-	-	-	.01	.21	.99	1.2	5.4	.061
S3	08-11-77	-	-	-	.01	.20	1.0	1.2	5.4	.047
S4	08-16-77	-	-	-	.08	.34	.76	1.2	5.2	.060

Lake-Bottom Materials

The data from lake bottom-material sampling are given in table 10. The highest concentration of nutrients was found at the deepest site (B12). In general, nutrient concentrations are higher at deeper sites than at the shallower sites. This may be related to the characteristics of the bottom materials, which are finer and contain higher concentrations of organic carbon at the deeper sites than at shallower sites.

The data indicate that under anaerobic conditions, nutrients are released from the bottom material into the water of the lake. The extent to which this occurs and the ultimate fate of these nutrients are unknown.

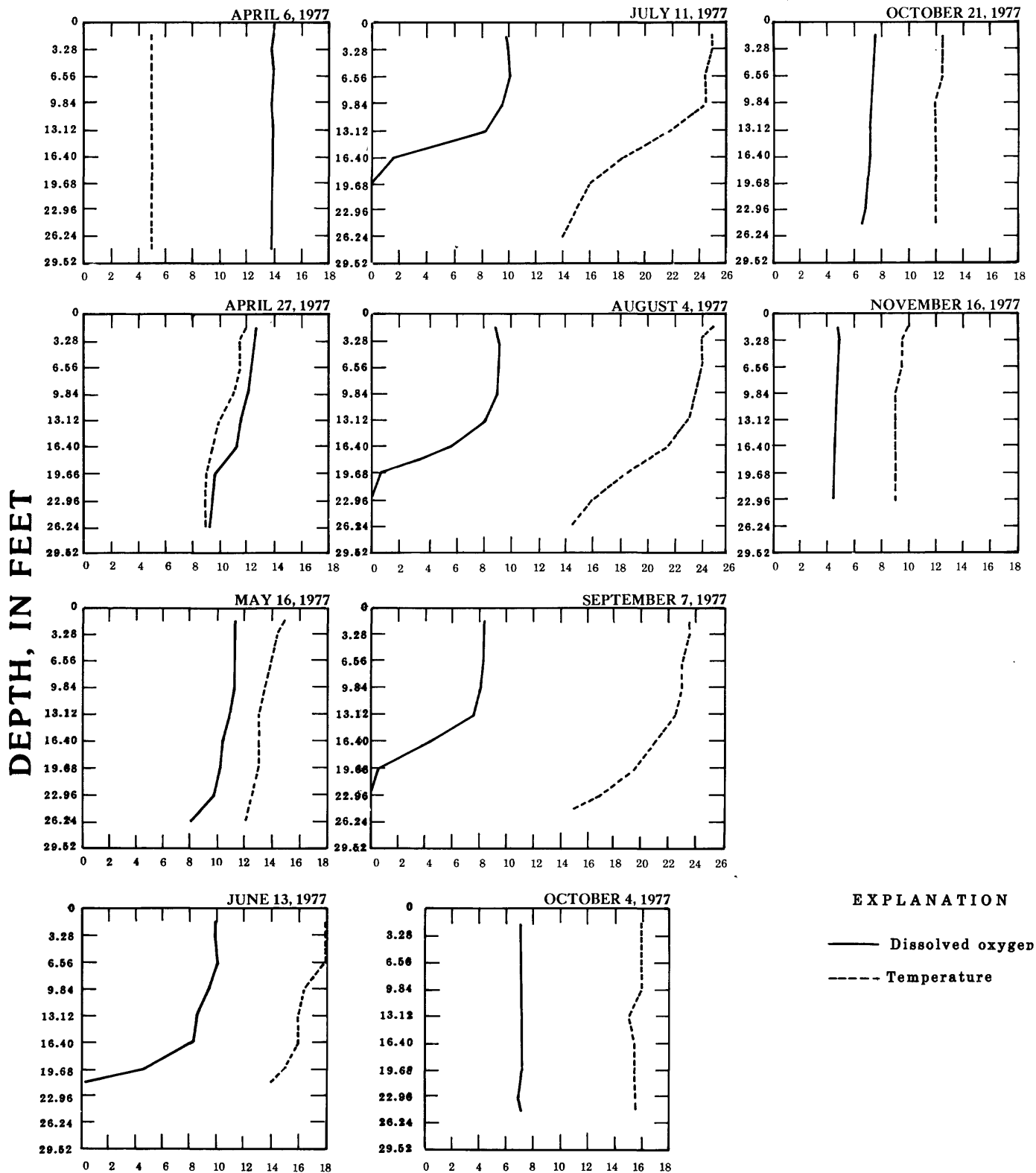
Table 10.--Chemical and physical characteristics of lake-bottom material

[ft, feet; mg/kg, milligrams per kilogram; g/kg, grams per kilogram; mm, millimeter]

Site number	Date	Sampling depth (ft)	Total nitrogen in bottom material as N (mg/kg)	Total phosphorus in bottom material as P (mg/kg)	Organic carbon in bottom material as C (g/kg)	Bed material fall diameter (percent finer than 0.004mm)	Bed material fall diameter (percent finer than 0.062mm)	Bed material sieve diameter (percent finer than 2.00 mm)
B1	05-05-77	2.0	3,000	850	10	8	21	100
B2	05-05-77	2.0	12,000	790	28	12	29	100
B3	05-04-77	20	23,000	930	56	26	81	100
B4	05-04-77	2.0	2,200	430	7.6	5	11	100
B5	05-04-77	15	34,000	1,000	94	37	91	100
B6	05-05-77	2.0	4,500	980	18	5	13	100
B7	05-04-77	2.0	1,700	100	65.0	3	8	100
B8	05-04-77	25	22,000	990	51	27	85	100
B9	05-04-77	27	33,000	1,100	75	39	95	100
B10	05-04-77	3.0	730	700	2.2	1	8	100
B11	05-04-77	2.0	1,200	95	2.8	0	3	100
B12	05-04-77	40	42,000	5,000	103	56	86	100
B13	05-04-77	10	4,300	990	15	7	22	100

Lake Water

Results of lake water analyses are given in table 11 (at back of report). The data indicate that the lake begins to stratify thermally in late April. By mid-June, the lake is well stratified, and dissolved oxygen levels are near zero in the hypolimnion. Stratification continues through early September, with anaerobic conditions existing in regions of the lake below 20 to 24 ft. Stratification begins to break down in mid-September and the lake is essentially homothermous by early October. Figure 6 shows temperature and dissolved-oxygen profiles during the period of study at site L8.



DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER AND TEMPERATURE, IN DEGREES CELSIUS

Figure 6.--Temperature and dissolved-oxygen profiles at lake station L8.

Nutrient data (table 11) show phosphorus, and often nitrogen concentrations, are usually highest near the lake bottom. This is most evident during the summer when the lake is stratified. It is not observed during turnover in April or October. The nutrient concentrations begin to increase near the bottom of the lake in June. They continue to increase through early September, then they begin to decrease rapidly. The June increase is probably due to reducing reactions that take place in the bottom sediments under anaerobic conditions, releasing nutrients to the surrounding water. Because the lake is stratified at this time, little mixing of water takes place, and nutrients are not made available to support algal growth near the lake surface. This is reflected in the nutrient concentrations in water near the surface of the lake, which appear to react independently of the concentrations at the bottom water during this period. Surface nutrient concentrations during the summer growing period are probably controlled to a greater extent by precipitation and inflows than by mixing with other levels of the lake. As stratification begins to break down in September, mixing takes place and nutrient-rich waters near the bottom reach the surface. This produces a marked decrease in nutrient concentrations at the bottom, and an increase in concentrations at the surface.

Algal populations in the lake varied during the 1977 growing season. Golden-brown algae (Chrysophyta) predominated in April, but blue-green algae (Cyanophyta) predominated by mid-May and continued throughout the summer. They were replaced by golden-brown algae and euglenoids (Euglenophyta) in October. It is notable that the change in predominant algal types is concurrent with the spring and fall turnover of the lake. This may be related to the release of silica from bottom sediments into the surface of the lake during turnover. Silica is essential to the growth of certain golden-brown algae, in particular, the diatoms. The change in dominance of algal types may also be controlled by nitrogen concentrations. The change in May and June occurred in conjunction with a sharp decrease in surface nitrogen concentrations. Blue-green algae are capable of using atmospheric nitrogen in place of high nitrogen concentrations in the water, essential to most other types of algae. The decrease in nitrogen concentrations would thus impede the production of other algal types, while having no effect on blue-green algae. In late September and October, nitrogen concentrations increased in surface waters and dominance reverted back to golden-brown algae, along with euglenoids. No serious algal blooms were observed during the 1977 sampling period, and the lake was said to have had a "good year" by local residents.

SUMMARY

Data collected from March 1977 to March 1978 indicate that the major sources of nutrients to the lake are surface-water inflows at the northeastern corner of the lake, with Lake Waramaug Brook being the largest single contributor. The highest nutrient concentrations occur in streams during periods of high flow. Bacteriological data from surface-water inflows frequently indicate high levels of fecal contamination, primarily from nonhuman sources.

Atmospheric deposition in the lake watershed contains 0.01 to 0.47 mg/L total phosphorus and 0.52 to 3.2 mg/L total nitrogen, and may be a significant source of nutrients to the lake. During the period April 1 to November 9, 1977, atmospheric deposition contributed about 61,400 lb of nitrogen and 3,150 lb of phosphorus to the lake watershed.

Ground-water and in-lake seepage do not appear to contribute a significant quantity of nutrients to the lake, although a more thorough study of ground-water flows and quality is necessary to confirm this.

Bottom materials from deep sections of the lake contain higher concentrations of nutrients and organic carbon, and are of finer size than those from shallower sites in the lake. In general, lake bottom materials contained high concentrations of nutrients.

Lake Waramaug was found to develop strong thermal stratification during the summer months, with anaerobic conditions existing in the hypolimnion during most of this period. Nutrients in the lake were also found to concentrate at specific levels during stratification. The highest nutrient concentrations were located near the lake bottom, possibly because of the release of nutrients from bottom materials during anaerobic conditions. These nutrients do not appear to mix with water in other levels of the lake until the fall turnover. Blue-green algae predominate in the lake during the summer, with golden-brown algae predominating in the spring and fall.

Lake morphology probably contributes to the lake's history of local algal blooms in the northwestern finger, although no significant blooms were observed during the period of this study.

CITED REFERENCES

- Brown, Eugene, Skougstad, M.W., and Fishman, M.J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. A1, 160 p.
- Buchanan, T.J., and Somers, W.P., 1969, Discharge measurements at gaging stations: U.S. Geological Survey Techniques of Water-Resources Investigations, book 3, chap. A8, 65 p.
- Colton, R.B., 1969, Surficial geologic map of the New Preston quadrangle, Litchfield County, Connecticut: U.S. Geological Survey Quadrangle Map GQ-782, scale 1:24,000.
- Gates, R.M., and Bradley, W.C., 1952, The geology of the New Preston quadrangle: Connecticut Geological and Natural History Survey Miscellaneous Series no. 5, 46 p.
- Geldreich, E.E., and Kenner, B.A., 1969, Concepts of fecal streptococci in stream pollution: Journal Water Pollution Control Federation, v. 41, p. R336-R352.
- Greeson, P.E., Ehlke, T.A., Irwin, G.A., Lium, B.W., and Slack, K.V., eds., 1977, Methods for collection and analysis of aquatic biological and microbiological samples: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. A4, 332 p.
- King's Mark Environmental Review Team, 1976, Eutrophication of Lake Waramaug, Kent, Warren, and Washington, Connecticut: King's Mark Resource Conservation and Development Area, Warren, Connecticut, 34 p.
- Kulp, K.P., 1981, Bathymetry and aquatic plants of Lake Waramaug, Connecticut: U.S. Geological Survey Open-File Report 81-477, 1 sheet.
- Lee, D.R., 1977, A device for measuring seepage flux in lakes and estuaries: Limnology and Oceanography, v. 22, no. 1, p. 140-177.
- Norvell, W.A., and Frink, C.R., 1975, Water chemistry and fertility of twenty-three Connecticut lakes: Connecticut Agricultural Experiment Station Bulletin 759, 45 p.

SUPPLEMENTAL TABLES

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows

[ft³/s, cubic feet per second; μ S/cm, microsiemens per centimeter; °C, degrees Celsius; mg/L, milligrams per liter; immed., immediate; μ M, micrometer; MF, membrane filter; cols./100 mL, colonies per 100 milliliters; t/day, tons per day; <, less than; --, no data; e (following a number), estimated; B (following a number), non-ideal colony count]

INFLOW SITE 11												
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Spe- cific duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μ M-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1125	9.8	39	5.0	5.0	12.4	97	240	2	16	27	0.71
14...	1620	8.5	33	5.2	5.0	11.6	91	<8	<1	35	23	.53
June 1977												
01...	1545	.46	48	6.2	12.0	9.5	88	--	4,800	640	53	.07
September 1977												
20...	1430	.60	62	6.4	15.0	--	--	12,000	900	2,800	--	--
October 1977												
20...	1430	3.0	35	5.7	10.5	--	--	--	6	29	--	--
November 1977												
08...	1510	4.1	35	5.5	10.0	--	--	--	220	540	--	--
March 1978												
27...	1305	16	33	6.8	2.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.09	0.030	0.52	0.64	2.8	0.020	--	0.010	3.5	0.2	5	0.13
14...	.08	.020	.53	.63	2.8	.020	--	<.010	3.5	.1	4	.09
June 1977												
01...	.16	.010	.22	.39	1.7	.030	--	<.010	5.8	3.1	18	.02
September 1977												
20...	.08	.050	.10	.23	1.0	.010	0.010	--	7.6	1.8	8	.01
October 1977												
20...	<.10	<.010	.07	.07	.31	.010	.010	--	6.0	--	2	.02
November 1977												
08...	<.10	<.010	.24	.24	1.1	.030	.020	--	11	4.1	4	.04
March 1978												
27...	--	--	--	--	--	.048	.006	--	--	.3	57	2.5

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 12										
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, dissolved saturation (per cent)	Coli-form total, immed. (cols./ 100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci fecal KF agar (cols./ 100 mL)
March 1977										
14...	1155	196	75	6.6	4.0	13.2	100	2,100	350	18,000B
14...	1555	171	72	6.8	4.0	13.2	100	7,400	4,700	15,000B
June 1977										
01...	1405	2.8	130	6.9	15.0	9.9	97	4,500	4,000	2,800
02...	1015	7.6	120	7.1	15.0	10.4	102	9,500	1,400	5,200
07...	1030	5.1	127	7.4	12.5	10.3	96	3,800	1,900	5,000
September 1977										
20...	1115	6.9	195	7.7	16.0	9.5	96	16,000	120,000B	1,400,000B
20...	1325	5.2	195	--	16.0	--	--	--	--	--
October 1977										
20...	1345	53	95	7.2	9.5	11.7	102	--	3,900	5,200
November 1977										
08...	1050	102	102	7.2	8.5	12.6	108	--	55,000	200,000
08...	1330	90	100	--	8.5	--	--	--	--	--
08...	1455	80	85	--	9.0	--	--	--	--	--
March 1978										
20...	0915	16	--	--	--	--	--	--	--	--
21...	0918	16	--	--	--	--	--	--	--	--
22...	1015	36	--	--	--	--	--	--	--	--
23...	0906	32	--	--	--	--	--	--	--	--
24...	1345	45	--	--	--	--	--	--	--	--
25...	1400	35	--	--	--	--	--	--	--	--
26...	1220	30	--	--	--	--	--	--	--	--
27...	1005	245	--	--	--	--	--	--	--	--
27...	1100	325	--	--	--	--	--	--	--	--
27...	1200	325	77	6.9	1.0	--	--	--	--	--
27...	1230	325	--	--	--	--	--	--	--	--
27...	1300	325	--	--	--	--	--	--	--	--
27...	1330	325	--	--	--	--	--	--	--	--
27...	1400	325	--	--	--	--	--	--	--	--
27...	1430	290	--	--	--	--	--	--	--	--
27...	1500	268	--	--	--	--	--	--	--	--
27...	1530	268	--	--	--	--	--	--	--	--
27...	1600	245	--	--	--	--	--	--	--	--
27...	1630	215	--	--	--	--	--	--	--	--
28...	1245	116	58	6.6	3.5	--	--	--	--	--
29...	1205	117	--	--	--	--	--	--	--	--
30...	1330	78	--	--	--	--	--	--	--	--
31...	1130	64	52	6.8	3.5	--	--	--	--	--
Date	Time	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)				
March 1977										
14...	1155	43	23	0.41	0.130	0.62				
14...	1555	41	19	.40	.140	.64				
June 1977										
01...	1405	93	.70	.59	.030	.35				
02...	1015	78	1.6	.42	.040	.41				
07...	1030	81	1.1	.51	.040	.41				
September 1977										
20...	1115	--	--	.61	.070	.84				
20...	1325	--	--	.61	.380	1.0				
October 1977										
20...	1345	--	--	.20	<.010	.22				
November 1977										
08...	1050	--	--	.38	.130	1.7				
08...	1330	--	--	.29	.010	.79				
08...	1455	--	--	.29	.010	.57				

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 13												
Date	Time	Stream- flow, instant- aneous (ft ³ /s)	Spe- cific con- duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form, total, imed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1235	7.4	85	6.9	6.0	12.3	98	5,200	3,300	24,000	60	1.2
14...	1640	8.0	97	6.8	5.0	12.2	95	12,000	4,700	40,000	46	.99
June 1977												
01...	1455	.28	117	6.7	14.0	8.6	83	16,000	2,400	9,000	94	.07
02...	1100	.20	113	6.8	15.0	9.2	90	13,000	10,000	4,800	74	.04
07...	1105	.23	117	6.9	13.5	9.8	93	5,600	4,200	2,600	76	.05
September 1977												
20...	1210	.05e	240	--	15.0	8.9	87	160,000	180,000B	850,000B	--	--
20...	1410	.05	240	--	15.0	--	--	--	--	--	--	--
October 1977												
20...	1410	2.0	115	7.0	10.5	10.4	93	--	2,600	2,700	--	--
November 1977												
08...	1215	6.2	111	6.8	9.5	10.6	92	--	150,000	590,000e	--	--
08...	1445	4.0	112	--	11.0	--	--	--	--	--	--	--
March 1978												
27...	1345	16	77	6.7	3.0	--	--	--	--	--	--	--
Date		Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.81	0.250	0.58	1.6	7.3	0.130	--	0.050	6.5	24	59	1.2
14...	.85	.340	.52	1.7	7.6	.200	--	.090	6.2	48	84	1.8
June 1977												
01...	1.3	.130	.84	2.3	10	.110	--	.040	4.7	3.8	54	.04
02...	.92	.040	.26	1.2	5.4	.030	--	.020	5.9	12	17	.00
07...	.82	.040	.21	1.1	4.7	.050	--	.010	7.0	12	--	--
September 1977												
20...	2.4	.020	1.4	3.8	17	.350	.250	--	9.2	79	8	--
20...	2.2	.070	.77	3.0	13	.240	.200	--	8.7	--	5	.00
October 1977												
20...	.92	.010	.22	1.2	5.1	.130	.120	--	7.3	33	3	.02
November 1977												
08...	.96	.100	.84	1.9	8.4	.280	.160	--	9.8	63	47	.79
08...	.85	.080	.35	1.3	5.7	.140	.160	--	12	--	25	.27
March 1978												
27...	--	--	--	--	--	.376	.127	--	--	40	576	25

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 14												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./100 mL)	Strep-tococci, fecal, KF agar (cols./100 mL)	Solids, residue at 180°C dissolved (mg/L)	Solids, NO2+NO3 dissolved (t/day)	Nitro-gen, total (mg/L as N)	
March 1977												
14...	1300	0.13e	210	7.2	6.0	5,000	3,600	950	111	0.04	2.0	
October 1977												
20...	1425	.05	310	7.6	11.0	--	380	310	--	--	1.1	
November 1977												
08...	1310	5.1	320	--	10.5	--	1,800	5,400	--	--	1.0	
March 1978												
27...	1435	.09	182	6.8	4.0	--	--	--	--	--	--	
Date	Time	Nitro-gen, ammonia dissolved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dissolved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth potential, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.150	1.1	3.2	14	0.070	--	0.040	5.8	42	40	--	--
October 1977												
20...	.660	.44	2.2	9.7	.600	.570	--	7.1	--	7	.00	.00
November 1977												
08...	1.60	1.1	3.7	16	.980	.980	--	12	118	24	.33	.33
March 1978												
27...	--	--	--	--	.204	.167	--	--	52	35	.00	.00
INFLOW SITE 15												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./100 mL)	Strep-tococci, fecal, KF agar (cols./100 mL)	Solids, residue at 180°C dissolved (mg/L)	Solids, NO2+NO3 dissolved (t/day)	Nitro-gen, total (mg/L as N)	
March 1977												
14...	1315	0.26e	104	7.1	8.0	448	1	170	59	0.04	1.1	
October 1977												
20...	1420	.05	150	7.3	10.5	--	280	330	--	--	1.8	
November 1977												
08...	1400	2.7	140	--	11.0	--	780	1,500	--	--	.94	
March 1978												
27...	1500	.18	83	6.8	4.0	--	--	--	--	--	--	
Date	Time	Nitro-gen, ammonia dissolved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dissolved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth potential, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.050	0.70	1.9	8.2	0.020	--	0.010	7.4	7.3	35	--	--
October 1977												
20...	.010	.41	2.2	9.8	.020	.010	--	7.6	1.8	30	.00	.00
November 1977												
08...	<.010	.48	1.4	6.3	.030	.020	--	8.9	14	4	.03	.03
March 1978												
27...	--	--	--	--	.044	.016	--	--	12	70	.03	.03

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 16													
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Spe- cific con- ductance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form total, (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)	
March 1977													
14...	1325	11	62	6.5	6.0	12.2	98	220	20	3,300	39	1.2	
14...	1705	8.6	57	6.7	5.0	12.6	98	67B	<1	15,000B	41	.95	
June 1977													
01...	1425	.55	97	6.8	15.0	9.4	92	130,000B	12,000B	35,000	74	.11	
September 1977													
20...	1425	.08	140	--	17.0	--	--	4,800	610	900B	--	--	
October 1977													
20...	1325	.75	85	6.5	11.0	--	--	--	200	800	--	--	
November 1977													
08...	1030	.68	76	6.8	9.0	--	--	--	9,200	27,000	--	--	
March 1978													
27...	1520	15	47	6.8	3.0	--	--	--	--	--	--	--	

Date	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.34	0.050	0.55	0.94	4.2	0.030	--	<0.010	9.1	1.4	53	1.6
14...	.35	.050	.58	.98	4.3	.030	--	<.010	6.6	1.0	54	1.3
June 1977												
01...	.21	.040	1.4	1.6	7.1	.120	--	<.010	6.1	1.0	184	.27
September 1977												
20...	.23	.010	.47	.71	3.1	.050	.010	--	9.5	1.2	8	.00
October 1977												
20...	.25	<.010	.29	.54	2.4	.010	.010	--	9.2	.6	5	.01
November 1977												
08...	.22	.010	.99	1.2	5.4	.170	.030	--	14	1.0	115	.21
March 1978												
27...	--	--	--	--	--	.073	.006	--	--	3.9	179	7.3

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 17								
Date	Time	Stream- flow, instant- aneous (ft ³ /s)	Spe- cific con- duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)
March 1977								
14...	1405	80e	63	6.4	3.0	13.5	100	1,500
June 1977								
01...	1710	6.7	130	7.1	15.0	10.0	98	3,700
02...	1205	2.5	118	7.1	17.0	9.9	102	4,700
07...	1155	3.0	125	7.1	13.0	10.0	94	540
September 1977								
20...	1530	.82	245	--	14.5	--	--	1,800B
October 1977								
20...	1525	20	75	6.6	9.5	--	--	--
November 1977								
08...	1555	34	75	--	9.0	--	--	--
March 1978								
20...	0855	6.7	--	--	--	--	--	--
21...	0900	6.1	--	--	--	--	--	--
22...	0955	26	--	--	--	--	--	--
23...	0850	25	--	--	--	--	--	--
24...	1415	28	--	--	--	--	--	--
25...	0900	22	--	--	--	--	--	--
26...	1045	17	--	--	--	--	--	--
27...	0940	52	--	--	--	--	--	--
27...	1100	64	--	--	--	--	--	--
27...	1230	64	94	6.7	.0	--	--	--
27...	1320	65	--	--	--	--	--	--
27...	1350	65	--	--	--	--	--	--
27...	1430	69	--	--	--	--	--	--
27...	1500	71	--	--	--	--	--	--
27...	1600	74	--	--	--	--	--	--
27...	1620	74	--	--	--	--	--	--
28...	1100	52	50	6.9	2.0	--	--	--
29...	1120	42	--	--	--	--	--	--
30...	1400	32	--	--	--	--	--	--
31...	1225	25	50	6.4	3.5	--	--	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 17--Continued							
Date	Coli- form, fecal, 0.7 µM-MF (cols./ 100 mL)	Strep- tococci, fecal, KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids, dis- solved (t/day)	Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)
March 1977							
14...	45	420	44	9.5	0.32	0.070	0.63
June 1977							
01...	1,900B	4,300	92	1.7	.45	.040	1.2
02...	160	540	80	.54	.22	.020	.43
07...	210	520	91	.74	.25	.010	.31
September 1977							
20...	1,000	2,600	--	--	.21	.010	.21
October 1977							
20...	65	140	--	--	.03	<.010	.16
November 1977							
08...	3,100	2,400	--	--	.09	<.010	.38
March 1978							
20...	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 18												
Date	Time	Stream- flow, instant- aneous (ft ³ /s)	Spe- cific con- duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1135	2.2	62	8.0	5.5	12.0	95	1108	1	74	43	0.26
June 1977												
01...	1555	.20e	116	6.6	15.0	8.6	84	4,700	6308	4,900B	85	.05
October 1977												
20...	1310	.10	108	6.3	11.0	--	--	--	84	270	--	--
November 1977												
08...	1145	.26	80	6.3	9.5	--	--	--	3,200	11,000	--	--
March 1978												
27...	1600	.35	47	7.1	3.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.12	0.030	0.50	0.65	2.9	0.030	--	0.010	4.8	5.5	65	0.39
June 1977												
01...	.30	.020	.50	.82	3.6	.110	--	.040	5.4	13	66	--
October 1977												
20...	.60	.010	.20	.81	3.6	.020	.020	--	7.1	7.0	6	.00
November 1977												
08...	.13	<.010	.17	.30	1.3	.080	.050	--	10	14	44	.03
March 1978												
27...	--	--	--	--	--	.026	.007	--	--	6.2	20	.02

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 19												
Date	Time	Stream- flow, instant- aneous (ft ³ /s)	Spe- cific con- duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 10C mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1210	46	36	6.7	4.0	13.1	99	100B	<1	35	30	3.7
14...	1745	40e	34	6.5	3.0	13.5	102	17B	<1	37	30	3.2
June 1977												
01...	1640	.64	48	6.4	14.0	9.7	93	4,200	2,100B	2,400B	44	.08
02...	1030	.84	43	6.7	16.0	10.0	101	4,200	<1	300	43	.10
07...	1030	.66	45	6.5	13.0	10.4	98	1,500	100	720	42	.07
September 1977												
20...	1340	.05	50	--	15.0	--	--	820	150	1,500B	--	--
October 1977												
20...	1250	9.3	52	6.5	10.0	--	--	--	42	100	--	--
November 1977												
08...	1230	4.7	57	--	10.0	--	--	--	640	2,200	--	--
March 1978												
20...	0926	2.9	--	--	--	--	--	--	--	--	--	--
21...	0930	3.2	--	--	--	--	--	--	--	--	--	--
22...	1025	7.8	--	--	--	--	--	--	--	--	--	--
23...	0915	9.2	--	--	--	--	--	--	--	--	--	--
24...	1350	14	--	--	--	--	--	--	--	--	--	--
25...	1410	12	--	--	--	--	--	--	--	--	--	--
26...	1215	7.4	--	--	--	--	--	--	--	--	--	--
27...	1015	45	--	--	--	--	--	--	--	--	--	--
27...	1115	38	28	6.3	4.5	--	--	--	--	--	--	--
27...	1145	37	30	6.4	4.5	--	--	--	--	--	--	--
27...	1215	38	30	6.3	4.5	--	--	--	--	--	--	--
27...	1245	38	28	6.4	4.0	--	--	--	--	--	--	--
27...	1315	37	27	6.4	4.0	--	--	--	--	--	--	--
27...	1345	36	28	6.4	4.0	--	--	--	--	--	--	--
27...	1415	34	27	6.5	4.0	--	--	--	--	--	--	--
27...	1445	34	26	6.5	4.0	--	--	--	--	--	--	--
27...	1515	34	28	6.4	4.0	--	--	--	--	--	--	--
27...	1545	34	29	6.4	4.0	--	--	--	--	--	--	--
27...	1615	34	27	6.4	3.5	--	--	--	--	--	--	--
27...	1645	32	30	6.5	3.5	--	--	--	--	--	--	--
28...	1215	26	29	6.7	3.5	--	--	--	--	--	--	--
29...	1215	21	--	--	--	--	--	--	--	--	--	--
30...	1345	18	--	--	--	--	--	--	--	--	--	--
31...	1200	15	24	6.7	4.0	--	--	--	--	--	--	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 19--Continued												
Date	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.12	0.060	0.47	0.65	2.9	0.030	--	0.010	5.9	5.1	31	3.9
14...	.14	.050	.65	.84	3.7	.030	--	.010	7.9	2.3	8	--
June 1977												
01...	.50	.030	.59	1.1	5.0	.060	--	.020	3.2	16	33	.06
02...	.26	.010	.34	.61	2.7	.060	--	.020	5.2	11	28	.06
07...	.36	<.010	.49	.85	3.8	.050	--	.020	6.3	10	11	.02
September 1977												
20...	.28	.010	.17	.46	2.0	.030	.020	--	8.5	9.6	8	.00
October 1977												
20...	.02	.020	.91	.95	4.2	.020	.020	--	10	1.7	11	.28
November 1977												
08...	.06	.010	.39	.46	2.0	.060	.020	--	9.1	2.2	16	.20
March 1978												
20...	--	--	--	--	--	.012	--	--	--	--	--	--
21...	--	--	--	--	--	.004	--	--	--	--	--	--
22...	--	--	--	--	--	.011	--	--	--	--	--	--
23...	--	--	--	--	--	.016	--	--	--	--	--	--
24...	--	--	--	--	--	.017	--	--	--	--	--	--
25...	--	--	--	--	--	.013	--	--	--	--	--	--
26...	--	--	--	--	--	.010	--	--	--	--	--	--
27...	--	--	--	--	--	.170	<.010	--	--	--	--	--
27...	--	--	--	--	--	.110	.005	--	--	--	--	--
27...	--	--	--	--	--	.066	.004	--	--	--	--	--
27...	--	--	--	--	--	.035	.007	--	--	.9	80	8.3
27...	--	--	--	--	--	.051	.004	--	--	--	51	5.2
27...	--	--	--	--	--	.042	.004	--	--	--	52	5.2
27...	--	--	--	--	--	.034	.004	--	--	--	40	3.9
27...	--	--	--	--	--	.028	.004	--	--	--	38	3.5
27...	--	--	--	--	--	.028	.007	--	--	--	31	2.8
27...	--	--	--	--	--	.048	.006	--	--	--	33	3.0
27...	--	--	--	--	--	.028	.009	--	--	--	25	2.3
27...	--	--	--	--	--	.047	.009	--	--	--	23	2.1
27...	--	--	--	--	--	.048	.005	--	--	--	26	2.2
28...	--	--	--	--	--	.013	.006	--	--	--	8	.56
29...	--	--	--	--	--	.015	--	--	--	--	3	.17
30...	--	--	--	--	--	.024	--	--	--	--	11	.53
31...	--	--	--	--	--	.017	.008	--	--	--	2	.08

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 110												
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Specific duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1250	0.44	72	7.0	5.0	10.8	84	428	1	110	50	0.06
14...	1730	.44e	67	7.0	5.0	12.6	98	<8	<1	100	47	.06
June 1977												
01...	1720	1.5e	63	6.7	14.0	9.4	90	5,200	4,200B	1,900	53	.21
07...	1130	.14	56	6.9	14.0	10.2	98	1,400	600	1,900	46	.02
October 1977												
20...	1230	.10	96	6.4	10.0	--	--	--	100	62	--	--
November 1977												
08...	1315	.28	80	--	11.0	10.4	94	--	520	1,500	--	--
March 1978												
27...	1245	1.3	49	6.5	6.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.18	0.050	0.83	1.1	4.7	0.020	--	<0.010	5.6	0.7	14	0.02
14...	.16	.050	.53	.74	3.3	.020	--	<.010	4.4	.6	7	--
June 1977												
01...	.19	.010	1.8	2.0	8.8	.120	--	.010	7.2	.4	119	--
07...	.04	.010	.05	.10	.44	.010	--	<.010	5.7	1.1	0	.00
October 1977												
20...	.12	<.010	.27	.39	1.7	.010	.010	--	9.3	3.2	12	.00
November 1977												
08...	.01	<.010	.31	.32	1.4	.020	.010	--	9.2	3.2	10	.00
March 1978												
27...	--	--	--	--	--	.013	<.010	--	--	.7	21	.07

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 111												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form total, (col./100 mL)	Coli-form, fecal, (col./100 mL)	Strep-tococci, fecal (col./100 mL)	Solids, residue at 180°C (mg/L)	Solids dissolved (t/day)
March 1977												
14...	1310	1.9	88	7.1	5.0	10.2	80	520B	10	500	63	0.32
14...	1720	1.5e	90	6.8	3.5	11.0	82	360B	24B	380	59	.24
June 1977												
01...	1810	1.0e	104	6.9	14.0	9.6	92	25,000B	24,000B	20,000B	75	.20
02...	1130	.10	125	7.3	16.0	10.2	103	2,700	<0	2,100	83	.02
07...	1205	.12	120	7.4	13.0	10.4	98	4,800B	1,300	2,500	82	.03
September 1977												
20...	1230	.04e	190	--	15.5	10.0	99	9,500B	780	5,500	--	--
October 1977												
20...	1205	.30e	146	6.8	10.0	--	--	--	65	270	--	--
November 1977												
08...	1350	.99	120	--	11.0	10.2	92	--	6,100	5,200	--	--
March 1978												
27...	1310	3.5	51	6.4	5.0	--	--	--	--	--	--	--

Date	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.61	0.150	0.95	1.7	7.6	0.080	--	0.020	12	17	40	0.21
14...	.58	.140	.96	1.7	7.4	.080	--	.020	15	21	32	--
June 1977												
01...	.37	.020	2.4	2.8	12	.300	--	.030	9.6	13	218	--
02...	.11	.020	.43	.56	2.5	.060	--	.060	4.2	6.7	17	.00
07...	.09	.010	.24	.34	1.5	.060	--	.040	5.3	7.2	6	.00
September 1977												
20...	<.10	.010	.09	.10	.44	.020	.010	--	8.5	23	12	--
October 1977												
20...	.37	<.010	.49	.86	3.8	.030	.030	--	8.5	16	3	--
November 1977												
08...	.48	.010	.68	1.2	5.2	.070	.060	--	12	9.7	18	.05
March 1978												
27...	--	--	--	--	--	.165	.010	--	--	3.5	91	.86

Table 7--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 112												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C dissolved (mg/L)	
March 1977	14...	1340	0.30e	114	7.4	5.0	10.0	78	<8	3	260	71

Date	Time (t/day)	Solids, dissolved (mg/L)	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dissolved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth potential, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)
March 1977	14...	0.06	0.30	0.050	0.73	1.1	4.8	0.020	<0.010	6.9	0.7	3

INFLOW SITE 113												
Date	Time	Stream-flow, instantaneous (ft³/s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C dissolved (mg/L)	
March 1977	14...	1400	--	144	6.7	6.0	11.8	94	120B	1	41	86
March 1978	27...	1335	.13	96	6.3	6.0	--	--	--	--	--	--

Date	Time	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dissolved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dissolved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Algal growth potential, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977	14...	1.0	0.040	0.86	1.9	8.4	0.050	--	0.010	2.8	3	--
March 1978	27...	--	--	--	--	--	.157	.031	--	6.7	6	.00

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 114												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (100 mL)	Coli-form, fecal, 0.7 μM-MF (100 mL)	Strep-tococci, KF agar (100 mL)	Solids, residue at 180°C (mg/L)	Nitro-gen, NO2+NO3 total (mg/L) (as N)
March 1977 14...	1620	--	100	6.6	4.5	7.8	58	12000	4000	280	56	0.18
June 1977 01...	1800	--	106	6.7	19.0	6.2	67	260	4	69	60	.02
March 1978 27...	1420	6.5	58	6.3	1.0	--	--	--	--	--	--	--
Date	Time	Nitro-gen, ammonia dissolved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis-solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977 14...	0.080	0.67	0.93	4.1	0.030	--	0.010	5.8	3.1	3	--	--
June 1977 01...	.120	.55	.69	3.1	.060	--	.040	4.8	8.1	33	--	--
March 1978 27...	--	--	--	--	.050	.038	--	--	8.9	7	.12	--
INFLOW SITE 115												
Date	Time	Spe-cific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (100 mL)	Coli-form, fecal, 0.7 μM-MF (100 mL)	Strep-tococci, KF agar (100 mL)	Solids, residue at 180°C (mg/L)		
March 1977 14...	1455	262	7.1	2.0	6.8	49	428	2	7500	139		
Date	Time	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	
March 1977 14...	0.43	0.080	0.85	1.4	6.0	0.090	0.020	5.5	0.8	26		

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE I16												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form total, (cols./100 mL)	Coli-form, fecal, μM-MF (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, at 180°C residue (mg/L)	Solids dissolved (t/day)
March 1977												
14...	1700	0.10e	460	6.8	4.0	9.4	71	25B	2	31	227	0.06
March 1978												
27...	1500	.01	99	6.3	7.0	--	--	--	--	--	--	--

Date	Nitrogen, NO2+NO3 total (mg/L as N)	Nitrogen, ammonia dissolved (mg/L as N)	Nitrogen, organic total (mg/L as N)	Nitrogen, total (mg/L as N)	Nitrogen, total (mg/L as NO3)	Phosphorus, total (mg/L as P)	Phosphorus, dissolved (mg/L as P)	Phosphorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth potential, bottle test (mg/L)	Sediment, suspended (mg/L)	Sediment, discharge, suspended (t/day)
March 1977												
14...	0.12	0.060	0.94	1.1	5.0	0.050	--	0.010	8.6	1.4	48	--
March 1978												
27...	--	--	--	--	--	.039	.021	--	--	3.4	7	.00

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 117												
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Spe- cific duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1130	4.1	53	6.8	3.5	13.0	96	<8	<1	57	28	0.31
14...	1600	4.0	57	6.8	3.0	13.4	99	<8	<1	67	33	.36
June 1977												
01...	1430	.13	90	6.5	12.0	9.0	83	4,000	1,000	7,700B	58	.02
September 1977												
20...	1215	.06	101	6.8	15.0	--	--	12,000	880	1,800	--	--
October 1977												
20...	1500	3.0	54	6.6	11.0	--	--	--	17	40	--	--
November 1977												
08...	1600	.87	60	6.6	10.5	--	--	--	500	380	--	--
March 1978												
27...	1555	5.1	43	7.0	1.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO2+NO3 total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.28	0.050	0.55	0.88	3.9	0.020	--	<0.010	3.7	0.7	16	0.18
14...	.24	.020	.24	.50	2.2	.030	--	<.010	4.4	4.4	13	.14
June 1977												
01...	.15	.040	.62	.81	3.6	.040	--	.010	4.1	1.0	37	.01
September 1977												
20...	.32	.010	.37	.70	3.1	.090	.080	--	7.3	2.6	5	.00
October 1977												
20...	.02	.010	.02	.05	.22	.010	.010	--	5.3	.4	3	.02
November 1977												
08...	.06	<.010	.15	.21	.93	.020	.020	--	11	11	6	.01
March 1978												
27...	--	--	--	--	--	.040	<.010	--	--	1.4	3	.04

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE I18												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (per-satur- ation)	Coli-form total, (cols./ 100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep-tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis-solved (mg/L)	Solids dis-solved (t/day)
March 1977												
14...	1215	0.25	57	6.9	3.0	13.6	101	508	<4	340	34	0.02
November 1977												
08...	1515	.05	68	6.1	10.5	--	--	--	220	2,600	--	--
Date	Time	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis-solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.97	0.080	0.82	1.9	8.3	0.180	--	0.010	8.0	2.1	75	0.05
November 1977												
08...	.95	<.010	.49	1.4	6.4	.070	.070	--	9.4	48	2	.00
INFLOW SITE I19												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (per-satur- ation)	Coli-form total, (cols./ 100 mL)	Coli-form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep-tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis-solved (mg/L)	Solids dis-solved (t/day)
March 1977												
14...	1240	0.45	55	7.0	3.0	13.6	101	258	<1	120	30	0.04
October 1977												
20...	1520	.10	81	6.6	11.0	--	--	--	11,000	1,400	--	--
November 1977												
08...	1500	.15	70	6.7	11.0	--	--	--	21,000	9,800	--	--
March 1978												
27...	1530	.18	47	7.0	2.0	--	--	--	--	--	--	--
Date	Time	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis-solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.63	0.050	0.73	1.4	6.2	0.050	--	0.010	4.9	10	51	0.06
October 1977												
20...	.17	.280	.07	.52	2.3	.150	.140	--	6.2	.3	2	.00
November 1977												
08...	.38	.060	.16	.60	2.7	.080	.070	--	11	--	0	.00
March 1978												
27...	--	--	--	--	--	.090	.020	--	--	12	169	.08

Table 7.--Chemical, physical and biological characteristics of surface-inflows--Continued

INFLOW SITE 120												
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (US/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form total, immed. (cols./100 mL)	Coli-form, fecal, 0.7 µM-MF (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C dis-solved (mg/L)	Solids dis-solved (t/day)
March 1977												
14...	1255	0.78	185	7.0	3.0	13.2	98	1,600	<1	1,600	107	0.23
October 1977												
20...	1525	.05	210	6.6	11.0	--	--	--	10	17	--	--
November 1977												
08...	1415	.08	170	6.8	10.5	--	--	--	230	480	--	--
March 1978												
27...	1510	.18	88	7.0	1.0	--	--	--	--	--	--	--
Date		Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved total (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis-solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977												
14...	0.52	0.090	0.59	1.2	5.3	0.310	--	0.020	4.9	17	125	0.26
October 1977												
20...	.31	.070	.14	.52	2.3	.040	.030	--	5.9	14	3	.00
November 1977												
08...	.46	.010	.45	.92	4.1	.070	.050	--	9.0	--	10	.00
March 1978												
27...	--	--	--	--	--	.117	.016	--	--	7.5	110	.05

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 121													
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C (mg/L)	Solids dissolved (mg/L)	Solids dissolved (t/day)
March 1977	14...	1315	4.5	51	6.9	3.0	13.2	98	4808	25	200	22	0.27
June 1977	02...	1030	.25	94	6.9	14.0	9.6	92	6,200	5	1,100	51	.03
October 1977	20...	1550	.50	48	6.8	11.0	--	--	--	280	2,800	--	--
November 1977	08...	1300	1.8	58	6.8	10.0	--	--	--	6,300	8,000	--	--
March 1978	27...	1440	.03	45	7.0	1.0	--	--	--	--	--	--	--
Date	Time	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, dis-solved (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)
March 1977	14...	0.16	0.050	0.34	0.55	2.4	0.050	--	<0.010	4.2	0.8	92	1.1
June 1977	02...	.06	.050	.19	.30	1.3	.020	--	<.010	7.0	.3	27	.02
October 1977	20...	.10	.010	.12	.23	1.0	.010	.010	--	--	1.6	2	.00
November 1977	08...	.20	.030	.18	.41	1.8	.050	.030	--	10	16	16	.08
March 1978	27...	--	--	--	--	--	.106	.016	--	--	4.4	180	.01
INFLOW SITE 122													
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, (percent saturation)	Coli-form, total, (cols./100 mL)	Coli-form, fecal, (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C (mg/L)	Solids dissolved (mg/L)	Solids dissolved (t/day)
March 1977	14...	1345	0.23	37	4.5	3.0	13.5	100	<8	3	46	19	
Date	Time	Solids, dis-solved (t/day)	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)	Nitro-gen, total (mg/L as N)	Nitro-gen, total (mg/L as NO3)	Phos-phorus, total (mg/L as P)	Phos-phorus, ortho, total (mg/L as P)	Algal growth poten-tial, bottle test (mg/L)	Sedi-ment, sus-pended (mg/L)	Sedi-ment, dis-charge, sus-pended (t/day)	
March 1977	14...	0.01	0.04	0.010	0.19	0.24	1.1	0.010	<0.010	0.0	23	0.01	

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 123								
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	Coli-form total, immed. (cols./100 mL)
March 1977								
14...	1415	--	86	7.2	4.0	12.0	91	130B
14...	1645	197	88	7.2	4.0	13.0	98	120B
June 1977								
01...	1615	6.1	96	8.5	19.0	9.4	101	180
02...	1115	7.8	97	8.7	19.5	10.2	111	3,400
07...	1025	7.9	95	7.9	19.0	9.0	97	85
September 1977								
20...	1040	2.1	81	7.1	21.0	8.2	91	1,200
October 1977								
20...	1600	64	89	6.8	12.0	--	--	--
November 1977								
08...	1200	25	92	7.2	12.0	10.8	100	--
08...	1630	33	89	7.0	12.0	--	--	--
March 1978								
27...	1410	160	94	7.2	2.0	--	--	--
Date		Coli-form, fecal, 0.7 μM-MF (cols./100 mL)	Strep-tococci, KF agar (cols./100 mL)	Solids, residue at 180°C (mg/L)	Solids (t/day)	Nitro-gen, NO2+NO3 total (mg/L as N)	Nitro-gen, ammonia dis-solved (mg/L as N)	Nitro-gen, organic total (mg/L as N)
March 1977								
14...	35	200e	43	--		0.23	0.170	0.66
14...	<1	420	46	24		.23	.150	.34
June 1977								
01...	58	220	52	.86		.01	.070	.73
02...	6	220	55	1.2		.01	.050	.95
07...	9	160	64	1.4		.01	.120	.02
September 1977								
20...	150	360B	--	--		.50	.170	.60
October 1977								
20...	54	190	--	--		.06	.180	.28
November 1977								
08...	220	400	--	--		.06	.060	.32
08...	--	--	--	--		.07	.060	.30
March 1978								
27...	--	--	--	--		--	--	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE I24												
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Spe- cific duct- ance (US/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 µM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1435	1.2	46	4.8	4.0	13.6	103	<8	<1	<1	23	0.07
June 1977												
01...	1655	.22	61	6.4	11.0	10.6	95	23	<1	140	38	.02
October 1977												
20...	1615	.25	39	5.7	10.0	--	--	--	2	8	--	--
November 1977												
08...	1515	.30	43	5.4	10.0	--	--	--	5	28	--	--
March 1978												
27...	1340	2.6	45	6.9	2.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.03	0.010	0.30	0.34	1.5	0.020	--	<0.010	9.2	0.0	200	0.65
June 1977												
01...	.19	.010	.66	.86	3.8	.010	--	<.010	4.9	.6	26	.02
October 1977												
20...	<.10	<.010	.00	.01	.04	<.010	.010	--	5.4	40	2	.00
November 1977												
08...	.04	.010	.00	.04	.18	.010	.010	--	11	.0	0	.00
March 1978												
27...	--	--	--	--	--	.009	.017	--	--	.0	28	.20

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 125												
Date	Time	Stream- flow, instantaneous (ft ³ /s)	Spe- cific duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Coli- form total, immed. (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- toco- coci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
March 1977												
14...	1455	0.68	40	4.5	4.0	13.8	105	<8	<1	1	16	0.03
October 1977												
20...	1630	.10	38	5.6	10.0	--	--	--	3	7	--	--
November 1977												
08...	1545	.10e	40	6.3	10.0	--	--	--	11	53	--	--

Date	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
March 1977												
14...	0.02	0.010	0.17	0.20	0.89	0.010	--	<0.010	1.6	0.0	4	0.00
October 1977												
20...	<.10	<.010	.06	.06	.27	.010	.010	--	6.8	.1	2	.00
November 1977												
08...	<.10	<.010	.00	.01	.04	.020	.010	--	9.5	.2	8	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 126								
Date	Time	Stream-flow, instantaneous (ft ³ /s)	Specific conductance (μS/cm)	pH (standard units)	Temperature (°C)	Oxygen, dissolved (mg/L)	Oxygen, dissolved (percent saturation)	Coliform total, immed. (cols./100 mL)
June 1977								
01...	1630	4.5	140	7.1	14.0	10.0	96	36,000
02...	1130	4.5	135	7.1	16.0	10.0	101	12,000
October 1977								
20...	1515	30	82	6.7	10.0	--	--	--
March 1978								
20...	0905	14	--	--	--	--	--	--
21...	0906	14	--	--	--	--	--	--
22...	1000	46	--	--	--	--	--	--
23...	0855	38	--	--	--	--	--	--
24...	1430	58	--	--	--	--	--	--
25...	0845	38	--	--	--	--	--	--
26...	1040	27	--	--	--	--	--	--
27...	0946	250	--	--	--	--	--	--
27...	1115	355	--	--	--	--	--	--
27...	1300	340	--	--	--	--	--	--
27...	1420	310	--	--	--	--	--	--
27...	1450	310	--	--	--	--	--	--
27...	1530	280	--	--	--	--	--	--
27...	1615	260	--	--	--	--	--	--
28...	1145	89	61	6.8	3.0	--	--	--
29...	1135	64	--	--	--	--	--	--
30...	1310	55	--	--	--	--	--	--
31...	1300	38	42	--	3.5	--	--	--

Date	Coliform, fecal, 0.7 μM-MF (cols./100 mL)	Streptococci, fecal, KF agar (cols./100 mL)	Solids, residue at 180°C dis-solved (mg/L)	Solids dis-solved (t/day)	Nitrogen, NO ₂ +NO ₃ total (mg/L as N)	Nitrogen, ammonia dis-solved (mg/L as N)	Nitrogen, organic total (mg/L as N)
June 1977							
01...	14,000	28,000	85	1.0	0.62	0.190	0.72
02...	1,100	3,300	74	.90	.35	.040	.19
October 1977							
20...	520	6,200	--	--	.17	.010	.12
March 1978							
20...	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--

Table 7.--Chemical, physical, and biological characteristics of surface-water inflows--Continued

INFLOW SITE 127												
Date	Time	Stream- flow, (ft ³ /s)	Spe- cific con- duct- ance (μS/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, (per- cent satur- ation)	Coli- form total, (cols./ 100 mL)	Coli- form, fecal, 0.7 μM-MF (cols./ 100 mL)	Strep- tococci KF agar (cols./ 100 mL)	Solids, residue at 180°C dis- solved (mg/L)	Solids dis- solved (t/day)
June 1977												
02...	1225	4.5	126	6.9	17.0	9.6	99	5,000	1,200B	1,300	76	0.92
September 1977												
20...	1350	6.5	165	7.1	16.0	--	--	46,000B	29,000B	48,000B	--	--
March 1978												
27...	1730	239	55	6.6	3.0	--	--	--	--	--	--	--

Date	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, dis- solved (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)	Sedi- ment, sus- pended (mg/L)	Sedi- ment, dis- charge, sus- pended (t/day)
June 1977												
02...	0.37	0.070	0.26	0.70	3.1	0.040	--	0.010	5.0	19	16	0.19
September 1977												
20...	<.10	.050	.30	.35	1.6	.030	.020	--	7.0	41	13	.23
March 1978												
27...	--	--	--	--	--	.080	.040	--	--	14	123	79

Table 11.--Chemical, physical, and biological characteristics of lake water

[ft, feet; $\mu\text{S}/\text{cm}$, microsiemens per centimeter; $^{\circ}\text{C}$, degrees Celsius; m, meters;
mg/L, milligrams per liter; FET-fld, fixed end-point titration in the field<, less than; --, no data]

Lake site L1							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance ($\mu\text{S}/\text{cm}$)	pH (stand- ard units)	Temper- ature ($^{\circ}\text{C}$)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
04...	1315	3.30	69	6.7	6.0	14.0	112
04...	1316	6.60	70	6.7	6.0	14.0	112
04...	1317	9.90	70	6.5	6.0	13.9	111
04...	1318	13.2	70	6.9	6.0	13.9	111
26...	1155	1.60	88	8.4	12.0	11.9	110
26...	1156	3.30	88	8.4	11.5	11.9	109
26...	1157	6.60	88	8.4	11.5	11.9	109
May 1977							
16...	1145	1.60	80	7.5	14.0	10.6	102
16...	1146	3.30	80	8.0	13.0	11.2	106
16...	1147	5.00	80	8.0	13.0	11.2	106
June 1977							
13...	1135	1.60	84	6.8	17.5	9.1	95
13...	1137	3.30	84	5.5	17.0	8.8	91
13...	1139	6.60	85	5.5	16.5	8.6	88
13...	1141	8.20	85	5.5	16.5	8.3	85

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L2												
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Bicar- bonate FET-fld (mg/L as HCO ₃)	Alka- linity field (mg/L as CaCO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
April 1977												
04...	1400	1.60	--	--	--	1.40	--	--	18	15	--	.08
04...	1401	3.30	73	6.3	6.0	--	13.8	110	--	--	--	--
04...	1402	6.60	73	6.3	6.0	--	13.8	110	--	--	--	--
04...	1405	8.20	--	--	--	--	--	--	18	15	--	.08
04...	1406	9.90	73	6.2	6.0	--	13.8	110	--	--	--	--
04...	1407	13.2	74	6.1	6.0	--	13.8	110	--	--	--	--
04...	1410	15.0	--	--	--	--	--	--	17	14	--	.10
04...	1411	16.5	74	6.5	6.0	--	13.8	110	--	--	--	--
26...	1210	1.60	80	8.3	12.0	1.70	11.9	110	23	19	.2	.01
26...	1211	3.30	81	8.0	11.5	--	11.6	106	--	--	--	--
26...	1214	6.60	79	7.3	11.5	--	11.1	102	--	--	--	--
26...	1215	8.20	--	--	--	--	--	--	18	15	--	.01
26...	1217	9.80	76	7.4	11.0	--	11.6	105	--	--	--	--
26...	1219	13.2	81	7.4	10.0	--	11.7	104	--	--	--	--
26...	1220	15.0	88	7.1	10.0	--	11.2	99	22	18	2.8	.06
May 1977												
04...	1125	15.0	--	--	--	--	--	--	--	--	--	--
16...	1220	1.60	83	7.7	14.0	1.00	10.9	105	25	21	.8	<.10
16...	1223	3.30	82	7.8	13.0	--	11.0	104	--	--	--	--
16...	1224	6.60	82	7.9	13.0	--	11.1	105	--	--	--	--
16...	1225	8.20	--	--	--	--	--	--	19	16	--	<.10
16...	1226	9.80	81	7.7	12.5	--	11.0	103	--	--	--	--
16...	1227	13.2	81	7.4	12.5	--	10.8	101	--	--	--	--
16...	1230	15.0	81	7.0	12.5	--	10.1	94	19	16	3.0	.01
June 1977												
13...	1200	1.60	85	6.7	17.0	2.20	9.0	93	--	16	6.2	<.10
13...	1202	3.30	85	5.5	17.0	--	8.8	91	--	--	--	--
13...	1204	6.60	86	5.4	16.0	--	8.0	81	--	--	--	--
13...	1205	8.20	--	--	--	--	--	--	--	18	--	<.10
13...	1207	9.80	85	5.3	16.0	--	8.0	81	--	--	--	--
13...	1209	13.2	67	5.3	16.0	--	6.6	67	--	--	--	--
13...	1210	14.8	85	5.3	16.0	--	6.4	65	--	18	175	<.10
July 1977												
11...	1105	1.60	92	7.7	24.5	2.90	9.3	110	--	19	.7	.02
11...	1107	3.30	92	7.7	24.5	--	9.3	110	--	--	--	--
11...	1108	6.60	92	7.7	24.0	--	9.2	109	--	--	--	--
11...	1110	7.40	--	--	--	--	--	--	--	19	--	<.10
11...	1112	9.80	92	7.7	24.0	--	9.2	108	--	--	--	--
11...	1115	13.0	92	7.6	23.0	--	7.8	90	--	20	1.0	.01
August 1977												
04...	1155	1.60	94	7.5	24.5	2.60	9.0	107	--	19	1.2	<.10
04...	1157	3.30	94	7.4	24.5	--	9.0	107	--	--	--	--
04...	1159	6.60	94	7.4	24.0	--	8.9	105	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L2--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Alka- linity field (mg/L as CAC03)	Carbon dioxide dis- solved (mg/L as CO2)	Nitro- gen, NO2+NO3 total (mg/L as N)
August 1977											
04...	1200	7.40	--	--	--	--	--	--	19	--	<.10
04...	1202	9.80	94	7.3	24.0	--	8.2	96	--	--	--
04...	1205	13.0	115	7.3	23.0	--	3.8	44	20	1.9	.01
September 1977											
06...	1440	1.60	--	--	24.0	2.70	8.4	99	20	--	<.10
06...	1441	3.30	--	--	24.0	--	8.3	98	--	--	--
06...	1442	6.60	--	--	24.0	--	8.2	96	20	--	<.10
06...	1443	9.80	--	--	23.5	--	6.4	74	--	--	--
06...	1444	13.2	--	--	23.0	--	4.2	48	21	--	<.10
07...	1230	1.60	87	--	23.5	--	7.8	91	--	--	--
07...	1231	3.30	87	--	23.5	--	7.8	91	--	--	--
07...	1232	6.60	87	--	23.0	--	7.6	87	--	--	--
07...	1236	9.80	87	--	23.0	--	7.3	84	--	--	--
07...	1240	13.2	87	--	23.0	--	5.9	68	--	--	--
October 1977											
04...	1255	1.60	97	--	15.0	1.80	8.5	83	22	--	.03
04...	1256	3.30	97	--	15.0	--	8.5	83	--	--	--
04...	1257	6.60	99	--	15.0	--	8.6	84	--	--	--
04...	1300	7.40	--	--	--	--	--	--	22	--	.03
04...	1301	9.80	99	--	15.0	--	8.4	82	--	--	--
04...	1305	13.2	99	--	15.0	--	8.4	82	23	--	.04
21...	0945	1.60	80	7.4	11.5	1.70	8.1	74	20	1.5	.02
21...	0946	3.30	80	7.4	11.5	--	8.1	74	--	--	--
21...	0947	6.60	80	7.3	11.5	--	8.0	73	--	--	--
21...	0950	8.20	--	--	--	--	--	--	20	--	.04
21...	0951	9.80	80	7.3	11.5	--	8.0	73	--	--	--
21...	0952	13.2	80	7.4	11.5	--	8.0	73	--	--	--
21...	0955	14.9	80	7.4	11.5	--	8.1	74	20	1.5	.03
November 1977											
16...	1315	1.60	80	7.4	9.0	--	5.0	43	--	--	--
16...	1316	3.30	80	7.3	9.0	--	5.0	43	--	--	--
16...	1317	6.60	80	7.4	9.0	--	5.0	43	--	--	--
16...	1318	9.80	80	7.4	9.0	--	5.0	43	--	--	--
16...	1319	13.2	80	7.4	9.0	--	4.9	42	--	--	--
16...	1320	14.9	80	7.4	9.0	--	4.9	42	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L2--Continued										
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)
April 1977										
04...	1400	1.60	.080	.52	.68	3.0	.010	<.010	3.1	.8
04...	1401	3.30	--	--	--	--	--	--	--	--
04...	1402	6.60	--	--	--	--	--	--	--	--
04...	1405	8.20	.080	.42	.58	2.6	.010	<.010	5.8	--
04...	1406	9.90	--	--	--	--	--	--	--	--
04...	1407	13.2	--	--	--	--	--	--	--	--
04...	1410	15.0	.060	.74	.90	4.0	.020	<.010	6.7	--
04...	1411	16.5	--	--	--	--	--	--	--	--
26...	1210	1.60	.020	.40	.43	1.9	.020	<.010	--	--
26...	1211	3.30	--	--	--	--	--	--	--	--
26...	1214	6.60	--	--	--	--	--	--	--	--
26...	1215	8.20	.070	.49	.57	2.5	.020	<.010	--	--
26...	1217	9.80	--	--	--	--	--	--	--	--
26...	1219	13.2	--	--	--	--	--	--	--	--
26...	1220	15.0	.060	.81	.93	4.1	.070	<.010	--	--
May 1977										
04...	1125	15.0	--	--	--	--	--	--	--	--
16...	1220	1.60	.030	.42	.45	2.0	.030	<.010	--	--
16...	1223	3.30	--	--	--	--	--	--	--	--
16...	1224	6.60	--	--	--	--	--	--	--	--
16...	1225	8.20	.050	.35	.40	1.8	.030	<.010	--	--
16...	1226	9.80	--	--	--	--	--	--	--	--
16...	1227	13.2	--	--	--	--	--	--	--	--
16...	1230	15.0	.030	.61	.65	2.9	.070	<.010	--	--
June 1977										
13...	1200	1.60	.050	.28	.33	1.5	.020	<.010	--	--
13...	1202	3.30	--	--	--	--	--	--	--	--
13...	1204	6.60	--	--	--	--	--	--	--	--
13...	1205	8.20	.090	.27	.36	1.6	.030	<.010	--	--
13...	1207	9.80	--	--	--	--	--	--	--	--
13...	1209	13.2	--	--	--	--	--	--	--	--
13...	1210	14.8	.120	.35	.47	2.1	.040	<.010	--	--
July 1977										
11...	1105	1.60	.050	.61	.68	3.0	.020	--	--	--
11...	1107	3.30	--	--	--	--	--	--	--	--
11...	1108	6.60	--	--	--	--	--	--	--	--
11...	1110	7.40	.050	.39	.44	1.9	.020	--	--	--
11...	1112	9.80	--	--	--	--	--	--	--	--
11...	1115	13.0	.070	.41	.49	2.2	.020	--	--	--
August 1977										
04...	1155	1.60	.010	.45	.46	2.0	.020	--	4.3	.8
04...	1157	3.30	--	--	--	--	--	--	--	--
04...	1159	6.60	--	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L2--Continued								
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Carbon, organic total (mg/L as C)
August 1977								
04...	1200	7.40	.020	.53	.55	2.4	.030	8.0
04...	1202	9.80	--	--	--	--	--	--
04...	1205	13.0	.030	.39	.43	1.9	.050	5.9
September 1977								
06...	1440	1.60	.020	.31	.33	1.5	.030	--
06...	1441	3.30	--	--	--	--	--	--
06...	1442	6.60	.020	.33	.35	1.6	.030	--
06...	1443	9.80	--	--	--	--	--	--
06...	1444	13.2	.110	.37	.48	2.1	.050	--
06...	1445	--	.020	.33	--	--	--	--
06...	1450	--	.110	.37	--	--	--	--
07...	1230	1.60	--	--	--	--	--	--
07...	1231	3.30	--	--	--	--	--	--
07...	1232	6.60	--	--	--	--	--	--
07...	1236	9.80	--	--	--	--	--	--
07...	1240	13.2	--	--	--	--	--	--
October 1977								
04...	1255	1.60	.050	.38	.46	2.0	.030	--
04...	1256	3.30	--	--	--	--	--	--
04...	1257	6.60	--	--	--	--	--	--
04...	1300	7.40	.040	.38	.45	2.0	.100	--
04...	1301	9.80	--	--	--	--	--	--
04...	1305	13.2	.040	.42	.50	2.2	.100	--
21...	0945	1.60	.010	.89	.92	4.1	.020	--
21...	0946	3.30	--	--	--	--	--	--
21...	0947	6.60	--	--	--	--	--	--
21...	0950	8.20	.030	.55	.62	2.7	.030	--
21...	0951	9.80	--	--	--	--	--	--
21...	0952	13.2	--	--	--	--	--	--
21...	0955	14.9	.030	.80	.86	3.8	.020	--
November 1977								
16...	1315	1.60	--	--	--	--	--	--
16...	1316	3.30	--	--	--	--	--	--
16...	1317	6.60	--	--	--	--	--	--
16...	1318	9.80	--	--	--	--	--	--
16...	1319	13.2	--	--	--	--	--	--
16...	1320	14.9	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L2--Continued

DATE TIME	Phytoplankton analyses											
	APR 4.77 1400	APR 26.77 1200	APR 26.77 1210	MAY 16.77 1220	JUN 13.77 1200	JUL 11.77 1105						
DIVERSITY: DIVISION	0.0	0.9	1.0	0.9	0.9	0.9						
..CLASS	0.0	0.9	1.0	0.9	0.9	0.9						
..ORDER	1.0	1.6	1.0	0.9	1.6	1.6						
...FAMILY	1.0	1.6	1.0	1.6	1.6	1.6						
....GENUS	1.0	1.6	1.0	1.6	1.6	1.7						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....CHARACIACEAE												
....SCHROEDERIA	--	-	* 0	--	-	--	-	--	-	--	-	--
....MICRACTINIACEAE												
....MICRACTINIUM	--	-	* 0	--	-	* 0	--	-	--	-	--	-
....OOCYSTACEAE												
....ANKISTRODESMUS	* 0	--	-	--	-	* 0	--	-	--	-	--	-
....CHODATELLA	* 0	--	-	--	-	* 0	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	# 33	--	2500#	26
....KIRCHNERIELLA	--	-	--	-	--	-	* 0	--	-	--	-	--
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	59	1
....QUADRICOCCLUS	--	-	--	-	--	-	* 0	--	-	--	-	--
....TETRAEDRON	* 0	--	-	--	-	* 0	--	-	--	-	--	-
....SCENEDESMACEAE												
....SCENEDESMUS	* 0	--	-	--	-	* 0	--	-	--	-	--	-
....TETRASPORALES												
....PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....VOLVOCALES												
....CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	* 0	--	-	--	-	--	-	--	-	--	-	--
....ZYGNEMATALES												
....DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	* 0	--	-	--	-	--
....COSMARIIUM	--	-	--	-	--	-	--	-	--	-	69	1
....STAUSTRUM	--	-	--	-	--	-	--	-	--	-	* 0	--
CHRYSTOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
...COSCINODISCEAE												
....CYCLOTETRA	# 50	* 0	--	-	* 0	--	-	--	-	--	-	--
....MELOSIRA	* 0	* 0	--	-	* 0	--	-	--	-	--	-	--
....STEPHANODISCUS	--	-	* 0	--	-	* 0	--	-	--	-	--	-
...PENNALES												
....ACHNANTHACEAE												
....ACHNANTHES	* 0	--	-	--	-	--	-	--	-	--	-	--
....CYMBELLACEAE												
....CYMBELLA	--	-	* 0	--	-	--	-	--	-	--	-	--
....FRAGILARIACEAE												
....ASTERIONELLA	# 50	# 33	--	-	# 50	# 33	--	-	--	-	--	-
....FRAGILARIA	* 0	--	-	--	-	--	-	--	-	--	-	--
....SYNEDRA	--	-	* 0	--	-	* 0	--	-	--	-	--	-
....MERIDIONACEAE												
....MERIDION	--	-	* 0	--	-	--	-	--	-	--	-	--
....NITZSCHIA												
....NITZSCHIA	* 0	--	-	--	-	--	-	--	-	--	-	--
....TABELLARIACEAE												
....TABELLARIA	--	-	* 0	--	-	--	-	--	-	--	-	--
..CHRYSTOPHYCEAE												
...CHRYSOMONADALES												
...CHROMONADACEAE												
....DINOBRYON	* 0	--	-	--	-	--	-	--	-	--	-	--
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCALES												
....CHROCOCCACEAE												
....ANACYSTIS	--	-	# 33	--	-	--	-	--	-	--	-	--
...HORMOGONALES												
....NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	3900#	41
....APHANIZOMENON	* 0	* 0	--	-	# 50	# 33	--	-	--	-	--	-
....OSCILLATORIA												
....OSCILLATORIA	* 0	# 33	--	-	# 33	# 33	--	-	# 33	--	-	--
...CHROCOCCALES												
....CHROCOCCACEAE												
....GOMPHOSPHERIA	--	-	* 0	--	-	--	-	# 33	--	-	3000#	31
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	* 0	--
PYRRHOPHYTA (FIRE ALGAE)												
..PYRRHOPHYCEAE												
...PERIDINIALES												
....PERIDINIACEAE												
....PERIDINIUM	--	-	* 0	--	-	--	-	--	-	--	-	--

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued
Lake site L2--Continued

Phytoplankton analyses										
DATE TIME	AUG 4.77 1155	AUG 17.77 1115	SEP 6.77 1440	OCT 4.77 1255	OCT 21.77 0945					
DIVERSITY: DIVISION	1.5	1.5	0.0	1.0	1.5					
..CLASS	1.5	1.5	0.0	1.5	1.5					
...ORDER	1.5	1.5	1.0	2.3	2.0					
...FAMILY	1.5	1.5	1.0	2.6	2.0					
....GENUS	2.0	2.0	2.0	2.6	2.0					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
...MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
...ANKISTRODESMUS	*	0	--	-	--	-	--	-	--	-
...CHOOATELLA	--	-	--	-	--	-	--	-	--	-
...CLOSTERIOPSIS	*	0	--	-	--	-	--	-	--	-
...DICTYOSPHAERIUM	*	0	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
...NEPHROCYTIUM	*	0	--	-	--	-	--	-	--	-
...OOCYSTIS	*	0	--	-	--	-	--	-	--	-
...QUADRICOCBUS	--	-	--	-	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	*	0	--	-	--	-	--	-	--	-
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	#	25	#	25	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-
...ZYGNEATALES										
...DESMIDIACEAE										
...CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
...COSMARIIUM	--	-	--	-	--	-	--	-	--	-
...STAUROSTRUM	*	0	--	-	--	-	--	-	--	-
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	--	-	--	-	--	-	--	-	--	-
...MELOSIRA	--	-	--	-	--	-	#	17	#	25
...STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
...PENNALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
...ASTERIONELLA	--	-	--	-	--	-	#	17	--	-
...FRAGILARIA	--	-	--	-	--	-	--	-	--	-
...SYNEDRA	--	-	--	-	--	-	--	-	--	-
...MERIDIONACEAE										
...MERIDION	--	-	--	-	--	-	--	-	--	-
...NITZSCHIA										
...NITZSCHIA	*	0	--	-	--	-	--	-	--	-
...TABELLARIACEAE										
...TABELLARIA	--	-	--	-	--	-	--	-	--	-
..CHRYSTOPHYCEAE										
...CHRYSONOMADACEAE										
...OCHROMONADACEAE										
...DINORRYON	--	-	--	-	--	-	#	17	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
...ANACYSTIS	*	0	--	-	1#	25	--	-	--	-
...HORMOGONALES										
...NOSTOCACEAE										
...ANABAENA	#	25	#	25	1#	25	--	-	--	-
...APHANIZOMENON	#	25	#	25	1#	25	#	17	#	25
...OSCILLATORIA										
...OSCILLATORIA	--	-	--	-	--	-	#	17	--	-
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
...GOMPHOSPHAERIA	*	0	--	-	1#	25	#	17	#	25
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	*	0	--	-	--	-	--	-	--	-
...TRACHELOMONAS	#	25	#	25	--	-	--	-	#	25
PYRRHOPHYTA (FIRE ALGAE)										
..PYRRHOPHYCEAE										
...PERIDINIALES										
...PERIDINIAEAE										
...PERIDINIUM	--	-	--	-	--	-	--	-	--	-

* = Present in sample but not a dominant type.
= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L3							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
04...	1500	3.30	70	6.9	6.0	14.0	112
04...	1501	6.60	70	6.9	6.0	14.0	112
04...	1502	8.20	70	6.9	6.0	14.0	112
26...	1245	1.60	83	8.1	12.0	11.6	107
26...	1246	3.30	83	8.2	11.5	11.7	107
26...	1247	6.60	83	7.6	11.5	11.5	106
26...	1248	9.80	89	7.2	11.0	10.8	98
May 1977							
16...	1235	1.60	84	7.8	14.5	11.0	107
16...	1236	3.30	84	7.8	14.0	11.0	106
16...	1237	6.60	83	7.6	13.0	10.9	103
16...	1238	9.80	83	7.4	13.0	10.8	102
16...	1239	11.0	83	7.4	13.0	10.7	101
June 1977							
13...	1235	1.60	86	6.1	17.0	9.0	93
13...	1237	3.30	85	5.6	16.5	8.0	82
13...	1239	6.60	85	5.4	16.5	7.5	77
13...	1241	8.20	85	5.4	16.5	7.0	72
Lake site L4							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
04...	1515	1.60	75	6.9	6.0	14.1	113
04...	1516	3.30	76	7.0	6.0	14.1	113
04...	1517	6.60	76	7.0	6.0	14.1	113
04...	1518	9.80	76	7.0	6.0	14.1	113
04...	1519	11.6	77	7.1	6.0	14.0	112
26...	1355	1.60	81	9.0	12.0	13.0	120
26...	1356	3.30	82	9.0	12.0	13.0	120
26...	1357	6.60	82	9.2	11.5	13.2	121
26...	1358	9.80	81	8.7	11.0	12.4	113
26...	1359	11.6	81	8.3	11.0	12.1	110
May 1977							
16...	1255	1.60	86	8.0	15.0	11.0	108
16...	1256	3.30	85	8.2	13.5	11.2	107
16...	1257	6.60	85	7.9	13.0	11.0	104
16...	1258	9.80	85	7.7	13.0	10.9	103
16...	1259	13.2	85	7.4	13.0	10.7	101
16...	1300	15.0	85	7.0	13.0	9.8	93
June 1977							
13...	1250	1.60	87	7.2	18.0	9.8	103
13...	1252	3.30	87	5.9	18.0	9.8	103
13...	1254	6.60	87	5.6	17.5	9.8	103
13...	1256	9.80	87	5.4	17.5	9.6	102
13...	1258	13.2	87	5.5	17.5	9.6	100

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5												
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Bicar- bonate FET-fld (mg/L as HCO3)	Alka- linity field (mg/L as CACO3)	Carbon dioxide dis- solved (mg/L as CO2)	Nitro- gen, NO2+NO3 total (mg/L as N)
April 1977												
04...	1525	1.60	78	6.8	6.0	1.40	14.0	112	19	16	4.8	.10
04...	1526	3.30	78	6.8	6.0	--	14.0	112	--	--	--	--
04...	1527	6.60	78	6.8	6.0	--	14.0	112	--	--	--	--
04...	1528	9.80	78	6.8	6.0	--	14.0	112	--	--	--	--
04...	1530	13.2	78	6.8	6.0	--	13.9	111	18	15	4.5	.10
04...	1531	16.5	77	6.8	6.0	--	13.8	110	--	--	--	--
04...	1532	20.0	77	6.8	6.0	--	13.7	109	--	--	--	--
04...	1533	23.1	77	6.7	6.0	--	13.5	108	--	--	--	--
04...	1535	25.0	76	6.6	6.0	--	13.2	106	19	16	7.6	.14
26...	1415	1.60	80	9.0	12.5	1.50	12.9	120	20	16	.0	<.10
26...	1416	3.30	80	9.0	12.0	--	12.8	119	--	--	--	--
26...	1420	4.90	--	--	--	--	--	--	19	16	--	.01
26...	1421	6.60	80	8.7	11.5	--	12.3	113	--	--	--	--
26...	1425	9.80	79	8.0	11.0	--	11.9	108	20	16	.3	.01
26...	1426	13.2	79	7.5	10.0	--	11.8	104	--	--	--	--
26...	1427	16.5	79	6.9	9.0	--	10.5	91	--	--	--	--
26...	1428	20.0	80	6.9	9.0	--	10.2	88	--	--	--	--
26...	1430	21.5	80	6.9	9.0	--	10.1	87	20	16	4.0	.08
May 1977												
16...	1310	1.60	86	7.9	15.5	1.30	11.0	109	19	16	.4	<.10
16...	1312	3.30	85	8.2	14.0	--	11.1	107	--	--	--	--
16...	1315	6.60	85	8.2	13.5	--	11.3	108	19	16	.2	<.10
16...	1319	9.80	85	7.6	13.0	--	10.8	102	--	--	--	--
16...	1320	11.0	--	--	--	--	--	--	27	22	--	<.10
16...	1322	13.2	85	6.9	13.0	--	9.7	92	--	--	--	--
16...	1323	16.5	85	6.7	12.5	--	9.0	84	--	--	--	--
16...	1324	20.0	85	6.7	12.5	--	8.7	82	--	--	--	--
16...	1325	21.5	85	6.6	12.5	--	8.4	79	25	21	10	.00
June 1977												
13...	1305	1.60	87	6.0	18.5	3.2	9.8	103	--	17	33	<.10
13...	1307	3.30	87	5.6	18.0	--	9.8	103	--	--	--	--
13...	1308	6.60	87	5.4	18.0	--	9.8	103	--	--	--	--
13...	1309	9.80	87	5.3	17.5	--	9.8	102	--	--	--	--
13...	1310	13.1	87	5.3	17.5	--	9.8	102	--	18	175	<.10
13...	1312	16.5	87	5.3	17.0	--	9.0	93	--	--	--	--
13...	1315	18.0	--	--	--	--	--	--	--	18	--	<.10
13...	1317	20.0	87	5.2	15.5	--	6.0	59	--	--	--	--
13...	1320	21.3	87	5.3	15.5	--	4.2	42	--	20	194	.01
July 1977												
11...	1145	1.60	94	8.0	25.0	2.40	9.8	117	--	19	.4	<.10
11...	1147	3.30	94	8.0	25.0	--	9.8	117	--	--	--	--
11...	1149	6.60	93	8.0	24.0	--	9.6	113	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved satur- ation)	Alka- linity field (mg/L as CACO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
July 1977											
11...	1150	9.80	93	8.0	23.5	--	9.4	109	20	.4	.01
11...	1153	13.0	92	7.7	22.5	--	8.4	96	--	--	--
11...	1155	15.0	--	--	--	--	--	--	20	--	.01
11...	1157	16.0	91	7.8	18.0	--	1.8	19	--	--	--
11...	1200	18.0	--	--	--	--	--	--	21	--	.01
11...	1202	20.0	90	7.8	16.5	--	.0	0	--	--	--
11...	1205	21.0	90	7.8	15.5	--	.0	0	23	.7	.03
August 1977											
04...	1245	1.60	96	7.4	24.5	3.00	8.9	105	19	1.5	<.10
04...	1247	3.30	96	7.4	24.0	--	9.0	106	--	--	--
04...	1249	6.60	96	7.3	24.0	--	8.8	104	--	--	--
04...	1250	9.80	96	7.1	23.5	--	8.6	100	19	2.9	<.10
04...	1253	13.0	95	7.1	23.0	--	7.7	89	--	--	--
04...	1255	15.0	--	--	--	--	--	--	19	--	<.10
04...	1258	16.0	94	6.9	21.0	--	2.5	28	--	--	--
04...	1300	18.0	--	--	--	--	--	--	20	--	<.10
04...	1302	20.0	91	7.2	19.0	--	.0	0	--	--	--
04...	1305	21.0	91	7.3	18.0	--	.0	0	21	2.0	<.10
September 1977											
07...	1210	1.60	86	--	24.0	3.7	8.2	96	20	--	<.10
07...	1211	3.30	86	--	24.0	--	8.2	96	--	--	--
07...	1212	6.60	88	--	23.5	--	8.2	95	--	--	--
07...	1215	9.80	88	--	23.5	--	8.0	93	22	--	<.10
07...	1216	13.0	88	--	23.0	--	7.9	91	--	--	--
07...	1220	15.0	--	--	--	--	--	--	20	--	<.10
07...	1221	16.0	87	--	22.0	--	4.6	52	--	--	--
07...	1225	18.0	--	--	--	--	--	--	21	--	<.10
07...	1226	20.0	86	--	21.0	--	2.1	23	--	--	--
07...	1230	21.0	86	--	21.0	--	1.0	11	22	--	<.10
October 1977											
04...	1330	1.60	96	--	15.5	2.00	8.2	81	22	--	.02
04...	1331	3.30	96	--	15.5	--	8.1	80	--	--	--
04...	1335	6.60	96	--	15.5	--	8.1	80	24	--	.02
04...	1336	9.80	96	--	15.5	--	7.9	78	--	--	--
04...	1340	11.5	--	--	--	--	--	--	23	--	.02
04...	1341	13.2	98	--	15.5	--	7.9	78	--	--	--
04...	1342	16.4	98	--	15.5	--	7.6	75	--	--	--
04...	1345	18.0	--	--	--	--	--	--	24	--	.03
04...	1346	19.8	98	--	15.5	--	6.3	62	--	--	--
04...	1350	21.3	98	--	15.5	--	.0	0	23	--	.03
21...	1010	1.64	85	7.4	12.0	1.70	7.9	73	21	1.6	.05
21...	1011	3.30	85	7.4	12.0	--	7.9	73	--	--	--
21...	1015	6.60	85	7.3	12.0	--	7.9	73	22	2.1	.05
21...	1016	9.80	85	7.3	12.0	--	7.8	72	--	--	--
21...	1020	11.5	--	--	--	--	--	--	21	--	.05
21...	1021	13.0	85	7.3	12.0	--	7.8	72	--	--	--
21...	1025	16.4	85	7.2	12.0	--	7.7	70	22	2.7	.05
21...	1026	19.8	85	7.2	12.0	--	7.7	70	--	--	--
21...	1030	21.3	85	7.2	12.0	--	7.7	70	21	2.6	.02
November 1977											
16...	1330	1.60	80	7.3	9.5	--	4.9	43	--	--	--
16...	1331	3.30	80	7.3	9.5	--	4.9	43	--	--	--
16...	1332	6.60	80	7.3	9.0	--	4.8	41	--	--	--
16...	1333	9.80	80	7.3	9.0	--	4.8	41	--	--	--
16...	1334	13.2	80	7.3	9.0	--	4.7	40	--	--	--
16...	1335	16.4	80	7.3	9.0	--	4.7	40	--	--	--
16...	1336	19.8	80	7.3	9.0	--	4.8	41	--	--	--
April 1978											
13...	1300	1.50	80	7.3	6.0	2.00	7.9	--	--	--	--
13...	1305	9.84	82	7.3	5.5	--	7.5	--	--	--	--
13...	1310	23.0	90	7.1	5.0	--	7.0	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued									
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)
April 1977									
04...	1525	1.60	.080	.52	.70	3.1	.010	<.010	3.0
04...	1526	3.30	--	--	--	--	--	--	--
04...	1527	6.60	--	--	--	--	--	--	--
04...	1528	9.80	--	--	--	--	--	--	--
04...	1530	13.2	.060	.54	.70	3.1	.010	<.010	5.4
04...	1531	16.5	--	--	--	--	--	--	--
04...	1532	20.0	--	--	--	--	--	--	--
04...	1533	23.1	--	--	--	--	--	--	--
04...	1535	25.0	.060	.64	.84	3.7	.010	<.010	5.3
26...	1415	1.60	.090	.53	.62	2.7	.030	<.010	--
26...	1416	3.30	--	--	--	--	--	--	--
26...	1420	4.90	.080	.50	.59	2.6	.030	<.010	--
26...	1421	6.60	--	--	--	--	--	--	--
26...	1425	9.80	.080	.34	.43	1.9	.030	<.010	--
26...	1426	13.2	--	--	--	--	--	--	--
26...	1427	16.5	--	--	--	--	--	--	--
26...	1428	20.0	--	--	--	--	--	--	--
26...	1430	21.5	.120	.98	1.2	5.2	.100	<.010	--
May 1977									
16...	1310	1.60	.010	.41	.42	1.9	.020	<.010	--
16...	1312	3.30	--	--	--	--	--	--	--
16...	1315	6.60	.040	.38	.42	1.9	.030	<.010	--
16...	1319	9.80	--	--	--	--	--	--	--
16...	1320	11.0	.070	.33	.40	1.8	.030	<.010	--
16...	1322	13.2	--	--	--	--	--	--	--
16...	1323	16.5	--	--	--	--	--	--	--
16...	1324	20.0	--	--	--	--	--	--	--
16...	1325	21.5	.070	.32	.40	1.8	.030	<.010	--
June 1977									
13...	1305	1.60	.040	.21	.25	1.1	.030	<.010	--
13...	1307	3.30	--	--	--	--	--	--	--
13...	1308	6.60	--	--	--	--	--	--	--
13...	1309	9.80	--	--	--	--	--	--	--
13...	1310	13.1	.060	.24	.30	1.3	.030	<.010	--
13...	1312	16.5	--	--	--	--	--	--	--
13...	1315	18.0	.070	.31	.38	1.7	.020	<.010	--
13...	1317	20.0	--	--	--	--	--	--	--
13...	1320	21.3	.060	.29	.36	1.6	.030	<.010	--
July 1977									
11...	1145	1.60	.040	.57	.61	2.7	.010	--	--
11...	1147	3.30	--	--	--	--	--	--	--
11...	1149	6.60	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued									
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)
July 1977									
11...	1150	9.80	.030	.60	.64	2.8	.020	--	--
11...	1153	13.0	--	--	--	--	--	--	--
11...	1155	15.0	.070	.56	.64	2.8	.030	--	--
11...	1157	16.0	--	--	--	--	--	--	--
11...	1200	18.0	.130	.36	.50	2.2	.030	--	--
11...	1202	20.0	--	--	--	--	--	--	--
11...	1205	21.0	.180	2.1	2.3	10	.090	--	--
August 1977									
04...	1245	1.60	1.60	.97	1.0	4.4	.040	--	5.9
04...	1247	3.30	--	--	--	--	--	--	--
04...	1249	6.60	--	--	--	--	--	--	--
04...	1250	9.80	.030	.95	.98	4.3	.040	--	8.1
04...	1253	13.0	--	--	--	--	--	--	--
04...	1255	15.0	.020	.44	.46	2.0	.040	--	3.8
04...	1258	16.0	--	--	--	--	--	--	--
04...	1300	18.0	.050	.43	.48	2.1	.040	<.010	5.6
04...	1302	20.0	--	--	--	--	--	--	--
04...	1305	21.0	.010	1.1	1.1	4.9	.070	--	8.5
September 1977									
07...	1210	1.60	.020	.34	.36	1.6	.020	--	--
07...	1211	3.30	--	--	--	--	--	--	--
07...	1212	6.60	--	--	--	--	--	--	--
07...	1215	9.80	.020	.47	.49	2.2	.020	--	--
07...	1216	13.0	--	--	--	--	--	--	--
07...	1220	15.0	.020	.39	.41	1.8	.020	--	--
07...	1221	16.0	--	--	--	--	--	--	--
07...	1225	18.0	.040	.38	.42	1.9	.030	--	--
07...	1226	20.0	--	--	--	--	--	--	--
07...	1230	21.0	.130	.42	.55	2.4	.080	--	--
October 1977									
04...	1330	1.60	.070	.37	.46	2.0	.100	--	--
04...	1331	3.30	--	--	--	--	--	--	--
04...	1335	6.60	.030	.44	.49	2.2	.060	--	--
04...	1336	9.80	--	--	--	--	--	--	--
04...	1340	11.5	.030	.39	.44	1.9	.030	--	--
04...	1341	13.2	--	--	--	--	--	--	--
04...	1342	16.4	--	--	--	--	--	--	--
04...	1345	18.0	.030	.39	.45	2.0	.030	--	--
04...	1346	19.8	--	--	--	--	--	--	--
04...	1350	21.3	.020	.39	.44	1.9	.100	--	--
21...	1010	1.64	.070	.57	.69	3.1	.030	--	--
21...	1011	3.30	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued							
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)
October 1977							
21...	1015	6.60	.050	.44	.54	2.4	.030
21...	1016	9.80	--	--	--	--	--
21...	1020	11.5	.070	.68	.80	3.5	.030
21...	1021	13.0	--	--	--	--	--
21...	1025	16.4	.070	.43	.55	2.4	.030
21...	1026	19.8	--	--	--	--	--
21...	1030	21.3	.040	.48	.54	2.4	.030
November 1977							
16...	1330	1.60	--	--	--	--	--
16...	1331	3.30	--	--	--	--	--
16...	1332	6.60	--	--	--	--	--
16...	1333	9.80	--	--	--	--	--
16...	1334	13.2	--	--	--	--	--
16...	1335	16.4	--	--	--	--	--
16...	1336	19.8	--	--	--	--	--
April 1978							
13...	1300	1.50	--	--	--	--	.008
13...	1305	9.84	--	--	--	--	.010
13...	1310	23.0	--	--	--	--	.012

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued

Phytoplankton analyses												
DATE TIME	APR 4,77 1525		APR 26,77 1200		APR 26,77 1415		MAY 16,77 1310		JUN 13,77 1305		JUL 11,77 1145	
DIVERSITY: DIVISION	0.8		0.9		0.9		0.9		0.0		0.2	
..CLASS	0.8		0.9		0.9		0.9		0.0		0.2	
...ORDER	1.5		1.6		1.6		0.9		0.9		0.3	
...FAMILY	2.0		1.6		1.6		1.6		1.6		0.3	
....GENUS	2.0		1.6		1.6		1.6		1.6		0.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	* 0		140	1
....MICRACTINIACEAE												
....MICRACTINIUM	--	-	* 0		--	-	* 0		--	-	--	-
....OOCYSTACEAE												
....ANKISTRODESMUS	* 0		--	-	--	-	* 0		* 0		--	-
....CHODATELLA	* 0		* 0		--	-	* 0		--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	* 0		--	-
....NEPHROCYTIUM	--	-	--	-	--	-	* 0		--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	* 0		--	-
....TETRAEDRON	* 0		--	-	--	-	* 0		--	-	--	-
....SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	* 0		--	-
....SCENEDESMUS	* 0		* 0		--	-	* 0		* 0		--	-
....TETRASTRUM	* 0		--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...PALMELLACEAE												
...SPHAEROCYSTIS	--	-	--	-	--	-	--	-	* 0		700	3
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
...CHLAMYDOMONAS	* 0		* 0		--	-	--	-	--	-	--	-
...ZYGNEMATALES												
...DESMIDIACEAE												
...STAUSTRUM	--	-	--	-	--	-	--	-	* 0		--	-
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
....COSCINODISCACEAE												
....CYCLOTELLA	# 25		--	-	# 33		* 0		* 0		--	-
....MELOSIRA	* 0		--	-	--	-	* 0		* 0		--	-
....RHIZOSOLENIA												
....RHIZOSOLENIA	* 0		--	-	--	-	--	-	--	-	--	-
...PENNALES												
....ACHNANTHACEAE												
....COCCONEIS	--	-	* 0		--	-	--	-	--	-	--	-
....CYMBELLACEAE												
....EPITHEMIA	--	-	--	-	--	-	--	-	--	-	--	-
....FRAGILARIACEAE												
....ASTERIONELLA	# 25		# 33		# 33		# 33		* 0		--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	* 0		--	-
....SYNEDRA	--	-	* 0		--	-	* 0		--	-	--	-
....GOMPHONEMACEAE												
....GOMPHONEMA	# 25		--	-	--	-	--	-	--	-	--	-
....NITZSCHIA	* 0		--	-	--	-	* 0		--	-	--	-
....NITZSCHIA												
....TABELLARIACEAE												
....TABELLARIA	--	-	--	-	--	-	--	-	* 0		--	-
..CHRYSOPHYCEAE												
...CHRYSOMONADALES												
...OCHROMONADACEAE												
....DINOBRYON	* 0		* 0		--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	* 0		--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCALES												
....CHROCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	--	-	* 0		1600	6
...HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	# 33		280	1
....APHANIZOMENON	--	-	* 0		--	-	# 33		* 0		--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	# 25		# 33		# 33		# 33		# 33		--	-
...CHROCOCCALES												
....CHROCOCCACEAE												
....GOMPHOSPHERIA	--	-	# 33		--	-	--	-	# 33		24000# 90	
EUGLENOPHYTA (EUGLENIDS)												
..CRYPTOPHYCEAE												
...CRYPTOMONIDALS												
....CRYPTOMONODACEAE												
....CRYPTOMONAS	* 0		* 0		--	-	--	-	* 0		--	-
...EUGLENOPHYCEAE												
....EUGLENALES												
....EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	* 0		--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	* 0		* 0		--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALFS												
....CERATIACEAE												
....CERATIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	* 0		--	-	--	-	--	-	--	-

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L5--Continued

DATE TIME	Phytoplankton analyses									
	AUG 4.77 1245		AUG 17.77 1130		SEP 7.77 1210		OCT 4.77 1330		OCT 21.77 1010	
DIVERSITY: DIVISION	1.8		0.8		0.0		1.0		1.6	
..CLASS	1.8		0.8		0.0		1.5		1.6	
..ORDER	2.3		1.5		1.0		1.9		1.6	
...FAMILY	2.6		1.5		1.0		2.3		1.6	
....GENUS	2.6		2.0		2.0		2.6		1.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....MICRACINIACEAE										
....MICRACINIUM	--	-	--	-	--	-	--	-	--	-
....OOCYSTACEAE										
....ANKISTRODESMUS	*	0	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
....SCENEDESMACEAE										
....CRUCIGENIA	*	0	--	-	--	-	--	-	--	-
....SCENEDESMUS	*	0	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-
....TETRASPOALES										
....PALMELLACEAE										
....SPHAEROCYSTIS	#	17	--	-	--	-	--	-	--	-
....VOLVOCALES										
....CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-
....ZYGEMATALES										
....DESMIDIACEAE										
....STAUSTRUM	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
....CYCLOTILLA	--	-	--	-	--	-	--	-	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	#	33
....RHIZOSOLENIACEAE										
....RHIZOSOLENIA	--	-	--	-	--	-	--	-	--	-
...PENNALES										
....ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
....CYMBELLACEAE										
....EPITHEMIA	*	0	--	-	--	-	--	-	--	-
....FRAGILARIACEAE										
....ASTERIONELLA	--	-	--	-	--	-	#	17	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
....GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-
....TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	#	17	--	-
..CHRYSOPHYCEAE										
...CHRYSOMONADALES										
....OCHROMONADACEAE										
....DINORRYON	--	-	--	-	--	-	#	17	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
....CHROCOCCOCCAEAE										
....ANACYSTIS	--	-	--	-	#	25	#	17	--	-
...HORMOGONALES										
....NOSTOCACEAE										
....ANABAENA	--	-	#	25	#	25	--	-	--	-
....APHANIZOMENON	#	17	#	25	#	25	#	17	#	33
...OSCILLATORIA										
....OSCILLATORIA	#	17	--	-	--	-	--	-	--	-
...CHROCOCCOCCALES										
....CHROCOCCOCCAEAE										
....GOMPHOSPHAERIA	#	17	#	25	#	25	#	17	--	-
EUGLENOPHYTA (EUGLENIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIALES										
....CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
....EUGLENA	--	-	--	-	--	-	--	-	--	-
....EUGLENA	*	0	--	-	--	-	--	-	--	-
....PHACUS	#	17	#	25	--	-	--	-	#	33
....TRACHELOMONAS										
PYRRHOPHYTA (PIPE ALGAE)										
..PERIDINOPHYCEAE										
...PERIDINIALES										
....CERATIACEAE										
....CERATIUM	#	17	--	-	--	-	--	-	--	-
....PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L6							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
04...	1555	1.60	77	6.7	6.0	14.1	113
04...	1556	3.30	77	6.7	6.0	14.1	113
04...	1557	6.60	77	6.7	6.0	14.0	112
04...	1558	9.80	77	6.6	6.0	13.8	110
04...	1559	13.2	78	6.6	6.0	13.8	110
04...	1600	16.5	78	6.6	6.0	13.7	110
04...	1601	18.1	77	6.6	6.0	13.7	110
26...	1445	1.60	77	8.9	12.0	12.7	118
26...	1446	3.30	75	8.8	11.5	12.4	114
26...	1447	6.60	76	8.6	11.5	12.3	113
26...	1448	9.80	78	8.2	11.0	12.0	109
26...	1449	13.2	77	7.3	10.0	11.3	100
26...	1450	16.5	77	7.2	9.5	10.4	90
May 1977							
16...	1335	1.60	87	8.1	15.0	11.0	108
16...	1336	3.30	86	8.3	13.5	11.3	108
16...	1337	6.60	86	8.0	13.0	10.5	99
16...	1338	9.80	86	7.0	13.0	10.0	94
16...	1339	13.2	86	6.9	13.0	9.8	92
16...	1340	16.5	86	6.8	12.5	9.4	88
16...	1341	20.0	86	6.8	12.5	9.3	87
June 1977							
13...	1340	1.60	88	7.1	18.5	9.7	103
13...	1342	3.30	87	6.2	18.5	9.7	103
13...	1344	6.60	87	5.8	18.5	9.7	103
13...	1346	9.80	87	5.5	18.0	9.8	103
13...	1348	13.2	87	5.6	18.0	9.8	103
13...	1350	15.0	87	5.5	17.5	9.6	100
Lake site L7							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1120	1.60	79	7.7	5.0	13.9	109
06...	1121	3.30	79	7.7	5.0	13.8	108
06...	1122	6.60	80	7.7	5.0	13.8	108
06...	1123	9.80	79	7.7	5.0	13.8	108
06...	1124	11.0	80	7.7	5.0	13.8	108
27...	1315	1.60	81	8.7	11.5	12.6	116
27...	1316	3.30	81	8.6	11.5	12.6	116
27...	1317	6.60	81	8.5	11.5	12.4	114
27...	1318	9.80	82	8.4	11.0	12.1	110
May 1977							
16...	1355	1.60	88	8.5	14.5	11.4	111
16...	1356	3.30	87	8.6	14.0	11.5	111
16...	1357	6.60	86	8.2	13.5	11.2	107
16...	1358	9.80	86	7.6	13.0	10.7	101
June 1977							
13...	1355	1.60	87	7.4	18.0	9.9	104
13...	1357	3.30	87	6.6	18.0	9.9	104
13...	1359	6.60	87	5.9	17.5	10.0	104
13...	1400	9.80	87	5.6	17.0	9.8	101

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8												
			Spe- cific con- duct- ance	pH (stand- ard	Temper- ature	Trans- par- ency (secchi disk)	Oxygen, dis- solved	Oxygen, dis- solved (per- cent satur- ation)	Bicar- bonate FET-fld (mg/L as	Alka- linity field (mg/L as	Carbon dioxide dis- solved (mg/L as	Nitro- gen, NO2+NO3 total (mg/L as N)
Date	Time	(ft)	(μS/cm)	units)	(°C)	(m)	(mg/L)		HCO3)	CAC03)	as CO2)	as N)
April 1977												
06...	1140	1.60	76	7.7	5.0	1.30	13.9	109	19	16	.6	.17
06...	1141	3.30	77	7.7	5.0	--	13.8	108	--	--	--	--
06...	1142	6.60	77	7.7	5.0	--	13.9	109	--	--	--	--
06...	1143	9.80	77	7.6	5.0	--	13.8	108	--	--	--	--
06...	1144	13.2	77	7.6	5.0	--	13.9	109	--	--	--	--
06...	1145	14.0	--	--	--	--	--	--	19	16	--	.17
06...	1146	16.5	77	7.6	5.0	--	13.8	108	--	--	--	--
06...	1147	20.0	78	7.6	5.0	--	13.8	108	--	--	--	--
06...	1148	23.1	78	7.6	5.0	--	13.8	108	--	--	--	--
06...	1149	26.4	78	7.6	5.0	--	13.8	108	--	--	--	--
06...	1150	28.9	78	7.5	5.0	--	13.8	108	18	15	.9	.20
27...	1340	1.60	81	8.7	12.0	1.50	12.6	117	20	16	.0	<.10
27...	1342	3.30	81	8.7	11.5	--	12.5	115	--	--	--	--
27...	1345	4.90	--	--	--	--	--	--	20	16	--	<.10
27...	1346	6.60	81	8.6	11.5	--	12.3	113	--	--	--	--
27...	1347	9.80	80	8.4	11.0	--	12.0	109	--	--	--	--
27...	1350	11.5	--	--	--	--	--	--	24	20	--	.01
27...	1351	13.2	79	7.6	10.0	--	12.5	102	--	--	--	--
27...	1352	16.5	79	7.1	9.5	--	12.2	97	--	--	--	--
27...	1353	20.0	80	6.6	9.0	--	9.6	83	--	--	--	--
27...	1354	23.1	80	6.6	9.0	--	9.4	81	--	--	--	--
27...	1355	26.4	80	6.9	9.0	--	9.2	79	19	16	3.8	.08
May 1977												
04...	1305	27.0	--	--	--	--	--	--	--	--	--	--
16...	1415	1.60	88	8.4	15.0	1.00	11.3	111	19	16	.1	<.10
16...	1416	3.30	88	8.4	14.5	--	11.4	111	--	--	--	--
16...	1417	6.60	88	8.4	14.0	--	11.4	111	--	--	--	--
16...	1420	8.20	--	--	--	--	--	--	26	21	--	<.10
16...	1421	9.80	87	8.5	13.5	--	11.4	109	--	--	--	--
16...	1425	13.2	87	8.0	13.0	--	11.0	104	19	16	.3	<.10
16...	1426	16.5	87	7.2	13.0	--	10.4	98	--	--	--	--
16...	1427	20.0	87	7.2	13.0	--	10.3	97	--	--	--	--
16...	1428	23.1	87	6.9	12.5	--	9.8	92	--	--	--	--
16...	1430	26.4	87	6.6	12.0	--	8.0	74	24	20	9.6	.02
June 1977												
13...	1415	1.60	89	7.6	18.0	3.00	10.0	105	--	16	.8	.00
13...	1417	3.30	89	7.5	18.0	--	10.0	105	--	--	--	--
13...	1418	6.60	89	6.0	18.0	--	10.1	106	--	--	--	--
13...	1420	9.80	88	5.9	16.5	--	9.5	97	--	17	41	.02
13...	1421	13.2	88	5.6	16.0	--	8.7	88	--	--	--	--
13...	1423	16.5	88	5.7	16.0	--	8.4	85	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Alka- linity field (mg/L as CACO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
June 1977											
13...	1425	18.0	--	--	--	--	--	--	17	--	.04
13...	1426	20.0	88	5.7	15.0	--	4.7	46	--	--	--
13...	1430	21.3	89	5.7	14.0	--	.4	4	18	70	.01
July 1977											
11...	1225	1.60	96	8.0	25.0	2.40	9.8	117	19	.4	<.10
11...	1227	3.30	96	8.0	25.0	--	10.0	119	--	--	--
11...	1229	6.60	96	8.1	24.5	--	10.1	120	--	--	--
11...	1230	9.80	95	8.0	24.5	--	9.6	114	19	.4	<.10
11...	1233	13.0	93	7.8	22.0	--	8.4	95	--	--	--
11...	1235	15.0	--	--	--	--	--	--	19	--	<.10
11...	1237	16.0	91	7.9	18.5	--	1.7	18	--	--	--
11...	1239	20.0	90	7.9	16.0	--	.0	0	--	--	--
11...	1240	21.0	--	--	--	--	--	--	20	--	<.10
11...	1243	23.0	88	7.9	15.0	--	.0	0	--	--	--
11...	1245	26.0	105	8.0	14.0	--	.0	0	25	.5	<.10
August 1977											
04...	1320	1.60	98	7.6	25.0	3.00	8.9	106	19	.9	<.10
04...	1322	3.30	97	7.5	24.0	--	9.1	107	--	--	--
04...	1324	6.60	97	7.3	24.0	--	9.1	107	--	--	--
04...	1325	9.80	97	7.3	23.5	--	9.0	95	18	1.7	<.10
04...	1327	13.0	97	7.3	23.0	--	8.2	94	--	--	--
04...	1330	16.0	95	7.3	21.5	--	5.6	63	20	1.9	<.10
04...	1332	20.0	91	7.4	18.5	--	.7	7	--	--	--
04...	1335	23.0	94	7.4	16.0	--	.0	0	23	1.8	<.10
04...	1340	26.0	116	7.5	14.5	--	.0	0	28	1.7	<.10
September 1977											
07...	1245	1.60	87	--	23.5	3.6	8.4	98	20	--	.00
07...	1246	3.30	87	--	23.5	--	8.4	98	--	--	--
07...	1247	6.60	87	--	23.0	--	8.4	97	--	--	--
07...	1250	9.80	87	--	23.0	--	8.2	94	20	--	.00
07...	1251	13.0	88	--	22.5	--	7.7	88	--	--	--
07...	1255	16.0	86	--	21.0	--	4.4	49	21	--	.00
07...	1256	20.0	90	--	19.5	--	.6	6	--	--	--
07...	1300	21.0	--	--	--	--	--	--	24	--	<.10
07...	1301	23.0	99	--	17.0	--	.0	0	--	--	--
07...	1305	25.0	124	--	15.0	--	.0	0	37	--	.00
October 1977											
04...	1405	1.60	97	--	16.0	2.10	7.1	72	25	--	.03
04...	1406	3.30	97	--	16.0	--	7.2	73	--	--	--
04...	1410	6.60	97	--	16.0	--	7.2	73	23	--	.04
04...	1411	9.80	97	--	16.0	--	7.1	72	--	--	--
04...	1415	11.5	--	--	--	--	--	--	25	--	--
04...	1416	13.2	99	--	15.0	--	7.2	71	--	--	--
04...	1417	16.4	99	--	15.5	--	7.2	71	--	--	--
04...	1420	19.8	99	--	15.5	--	7.2	71	24	--	.03
04...	1421	23.0	99	--	15.5	--	7.0	69	--	--	--
04...	1425	24.7	99	--	15.5	--	7.2	71	--	--	.03
21...	1040	1.60	90	7.2	12.5	1.80	7.5	70	22	2.7	.05
21...	1041	3.30	90	7.2	12.5	--	7.5	70	--	--	--
21...	1045	6.60	90	7.2	12.5	--	7.4	69	22	2.7	.06
21...	1046	9.80	90	7.1	12.0	--	7.2	66	--	--	--
21...	1050	13.1	90	7.1	12.0	--	7.2	66	22	3.4	.06
21...	1051	13.2	90	7.0	12.0	--	7.1	65	--	--	--
21...	1052	20.0	90	7.0	12.0	--	7.0	64	--	--	--
21...	1055	21.3	--	--	--	--	--	--	23	--	.06
21...	1056	23.0	90	7.0	12.0	--	6.9	63	--	--	--
21...	1100	24.7	90	7.1	12.0	--	6.6	61	22	3.4	.07
November 1977											
16...	1340	1.60	85	7.3	10.0	--	4.9	43	--	--	--
16...	1341	3.30	85	7.3	9.5	--	4.9	42	--	--	--
16...	1342	6.60	85	7.3	9.5	--	4.9	42	--	--	--
16...	1343	9.80	84	7.3	9.0	--	4.8	41	--	--	--
16...	1344	13.2	80	7.2	9.0	--	4.8	41	--	--	--
16...	1345	16.0	80	7.2	9.0	--	4.7	40	--	--	--
16...	1346	19.8	80	7.2	9.0	--	4.7	40	--	--	--
16...	1347	23.0	80	7.2	9.0	--	4.5	38	--	--	--
April 1978											
13...	1240	3.28	85	7.0	5.5	2.10	7.1	--	--	--	--
13...	1245	13.1	85	6.9	5.0	--	6.8	--	--	--	--
13...	1250	26.2	85	6.9	5.0	--	6.5	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued										
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)
April 1977										
06...	1140	1.60	.050	.55	.77	3.4	.010	<.010	3.0	.7
06...	1141	3.30	--	--	--	--	--	--	--	--
06...	1142	6.60	--	--	--	--	--	--	--	--
06...	1143	9.80	--	--	--	--	--	--	--	--
06...	1144	13.2	--	--	--	--	--	--	--	--
06...	1145	14.0	.080	.32	.57	2.5	.010	<.010	2.8	--
06...	1146	16.5	--	--	--	--	--	--	--	--
06...	1147	20.0	--	--	--	--	--	--	--	--
06...	1148	23.1	--	--	--	--	--	--	--	--
06...	1149	26.4	--	--	--	--	--	--	--	--
06...	1150	28.9	.060	.54	.80	3.5	.020	<.010	3.6	--
27...	1340	1.60	.050	.37	.42	1.9	.030	<.010	--	--
27...	1342	3.30	--	--	--	--	--	--	--	--
27...	1345	4.90	.060	.61	.67	3.0	.030	<.010	--	--
27...	1346	6.60	--	--	--	--	--	--	--	--
27...	1347	9.80	--	--	--	--	--	--	--	--
27...	1350	11.5	.050	.46	.52	2.3	.020	<.010	--	--
27...	1351	13.2	--	--	--	--	--	--	--	--
27...	1352	16.5	--	--	--	--	--	--	--	--
27...	1353	20.0	--	--	--	--	--	--	--	--
27...	1354	23.1	--	--	--	--	--	--	--	--
27...	1355	26.4	.090	1.4	1.6	7.0	.170	<.010	--	--
May 1977										
04...	1305	27.0	--	--	--	--	--	--	--	--
16...	1415	1.60	.040	.33	.37	1.6	.030	<.010	--	--
16...	1416	3.30	--	--	--	--	--	--	--	--
16...	1417	6.60	--	--	--	--	--	--	--	--
16...	1420	8.20	.040	.27	.31	1.4	.030	<.010	--	--
16...	1421	9.80	--	--	--	--	--	--	--	--
16...	1425	13.2	.050	.30	.35	1.6	.030	<.010	--	--
16...	1426	16.5	--	--	--	--	--	--	--	--
16...	1427	20.0	--	--	--	--	--	--	--	--
16...	1428	23.1	--	--	--	--	--	--	--	--
16...	1430	26.4	.070	.44	.53	2.3	.090	<.010	--	--
June 1977										
13...	1415	1.60	.010	.32	.34	1.5	.015	<.010	--	--
13...	1417	3.30	--	--	--	--	--	--	--	--
13...	1418	6.60	--	--	--	--	--	--	--	--
13...	1420	9.80	.050	.29	.36	1.6	.030	<.010	--	--
13...	1421	13.2	--	--	--	--	--	--	--	--
13...	1423	16.5	--	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued										
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Nitro- gen, total (mg/L as P)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as C)	Carbon, organic total (mg/L)	Algal growth poten- tial, bottle test (mg/L)
June 1977										
13...	1425	18.0	.050	.32	.41	1.8	.030	<.010	--	--
13...	1426	20.0	--	--	--	--	--	--	--	--
13...	1430	21.3	.050	.45	.51	2.3	.030	<.010	--	--
July 1977										
11...	1225	1.60	.040	.49	.53	2.3	.020	--	--	--
11...	1227	3.30	--	--	--	--	--	--	--	--
11...	1229	6.60	--	--	--	--	--	--	--	--
11...	1230	9.80	.060	.50	.56	2.5	.020	--	--	--
11...	1233	13.0	--	--	--	--	--	--	--	--
11...	1235	15.0	.050	.38	.43	1.9	.030	--	--	--
11...	1237	16.0	--	--	--	--	--	--	--	--
11...	1239	20.0	--	--	--	--	--	--	--	--
11...	1240	21.0	.070	1.3	1.4	6.2	.040	--	--	--
11...	1243	23.0	--	--	--	--	--	--	--	--
11...	1245	26.0	.300	2.0	2.3	10	.100	--	--	--
August 1977										
04...	1320	1.60	.010	.52	.53	2.3	.020	--	4.9	.7
04...	1322	3.30	--	--	--	--	--	--	--	--
04...	1324	6.60	--	--	--	--	--	--	--	--
04...	1325	9.80	.010	.49	.50	2.2	.020	--	3.9	--
04...	1327	13.0	--	--	--	--	--	--	--	--
04...	1330	16.0	.020	.38	.40	1.8	.030	--	9.4	--
04...	1332	20.0	--	--	--	--	--	--	--	--
04...	1335	23.0	.070	.60	.67	3.0	.070	--	8.9	--
04...	1340	26.0	.190	.80	.99	4.4	.130	--	6.7	--
September 1977										
07...	1245	1.60	.050	.30	.36	1.6	.020	--	--	--
07...	1246	3.30	--	--	--	--	--	--	--	--
07...	1247	6.60	--	--	--	--	--	--	--	--
07...	1250	9.80	.040	.41	.46	2.0	.030	--	--	--
07...	1251	13.0	--	--	--	--	--	--	--	--
07...	1255	16.0	.030	.38	.42	1.9	.030	--	--	--
07...	1256	20.0	--	--	--	--	--	--	--	--
07...	1300	21.0	.170	.39	.56	2.5	.050	--	--	--
07...	1301	23.0	--	--	--	--	--	--	--	--
07...	1305	25.0	.890	.31	1.2	5.4	.240	--	--	--
October 1977										
04...	1405	1.60	.130	.37	.53	2.3	.100	--	--	--
04...	1406	3.30	--	--	--	--	--	--	--	--
04...	1410	6.60	.130	.37	.54	2.4	.080	--	--	--
04...	1411	9.80	--	--	--	--	--	--	--	--
04...	1415	11.5	--	--	--	--	--	--	--	--
04...	1416	13.2	--	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued							
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)
October 1977							
04...	1417	16.4	--	--	--	--	--
04...	1420	19.8	.130	.38	.54	2.4	.110
04...	1421	23.0	--	--	--	--	--
04...	1425	24.7	.130	.41	.57	2.5	.090
21...	1040	1.60	.140	.43	.62	2.7	.040
21...	1041	3.30	--	--	--	--	--
21...	1045	6.60	.140	.48	.68	3.0	.030
21...	1046	9.80	--	--	--	--	--
21...	1050	13.1	.140	.55	.75	3.3	.040
21...	1051	13.2	--	--	--	--	--
21...	1052	20.0	--	--	--	--	--
21...	1055	21.3	.140	.50	.70	3.1	.030
21...	1056	23.0	--	--	--	--	--
21...	1100	24.7	.140	.79	1.0	4.4	.030
November 1977							
16...	1340	1.60	--	--	--	--	--
16...	1341	3.30	--	--	--	--	--
16...	1342	6.60	--	--	--	--	--
16...	1343	9.80	--	--	--	--	--
16...	1344	13.2	--	--	--	--	--
16...	1345	16.0	--	--	--	--	--
16...	1346	19.8	--	--	--	--	--
16...	1347	23.0	--	--	--	--	--
April 1978							
13...	1240	3.28	--	--	--	--	.016
13...	1245	13.1	--	--	--	--	.015
13...	1250	26.2	--	--	--	--	.013

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued

Phytoplankton analyses												
DATE TIME	APR 6,77 1140		APR 27,77 1200		APR 27,77 1340		MAY 16,77 1415		JUN 13,77 1415		JUL 13,77 1225	
DIVERSITY: DIVISION	0.9		0.9		0.9		0.9		1.5		0.5	
..CLASS	0.9		0.9		0.9		0.9		1.5		0.5	
...ORDER	1.6		0.9		1.6		0.9		1.5		1.1	
...FAMILY	1.6		1.6		1.6		1.6		1.5		1.7	
....GENUS	1.6		1.6		1.6		1.6		2.0		1.8	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	*	0
....COELASTRACEAE									*	0	--	-
....COELASTRUM	--	-	--	-	--	-	--	-				
....MICRACETINACEAE												
....MICRACETINUM	--	-	*	0	--	-	*	0	--	-	--	-
....OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	--	-	--	-	*	0	--	-
....CHODATELLA	--	-	*	0	--	-	*	0	--	-	--	-
....DICTYOSPHAERIUM	--	-	*	0	--	-	--	-			670	7
....TETRAEDRON	--	-	*	0	--	-	*	0	--	-	--	-
....SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	91	1
....SCENEDESMUS	--	-	*	0	--	-	*	0	--	-	*	0
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	*	0	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	*	0	--	-	--	-	--	-	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	*	0	--	-	--	-
....STAUSTRUM	--	-	--	-	--	-	--	-	*	0	*	0
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
....COSCINODISCACEAE												
....CYCLOTELLA	# 33		*	0	--	-	*	0	--	-	--	-
....MELOSIRA	--	-	--	-	# 33		*	0	--	-	--	-
....STEPHANODISCUS	--	-	*	0	--	-	*	0	--	-	--	-
...PENNALES												
....ACHNANTHACEAE												
....ACHNANTHES	--	-	*	0	--	-	--	-	--	-	--	-
....FRAGILARIACEAE												
....ASTERIONELLA	# 33		# 33		# 33		# 33		# 25		--	-
....FRAGILARIA	--	-	--	-	--	-	*	0	# 25		--	-
....SYNEDRA	--	-	--	-	--	-	*	0	--	-	--	-
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	--	-	--	-	*	0	--	-	--	-
...NITZSCHIA												
....NITZSCHIA	--	-	*	0	--	-	--	-	--	-	--	-
...TABELLARIA												
....TABELLARIA	--	-	--	-	--	-	*	0	--	-	--	-
..CHRYSOPHYCEAE												
...CHRYSOMONADALES												
....OCHROMONADACEAE												
....DINOBYRON	--	-	--	-	--	-	*	0	--	-	--	-
....OCHROMONAS	--	-	*	0	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCOCCALES												
....CHROCOCCOCCAEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
...HORMOGONALES												
....NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	# 25		1500#	16
....APHANIZOMENON	--	-	# 33		# 33		# 33		--	-	--	-
...OSCILLATORIACEAE												
....ARTHROSPIRA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	# 33		# 33		--	-	# 33		--	-	5600#	58
....PHORMIDIUM	--	-	--	-	--	-	--	-	--	-	*	0
...CHROCOCCOCCALES												
....CHROCOCCOCCAEAE												
....GOMPHOSPHERIA	--	-	--	-	--	-	--	-	*	0	1600#	17
EUGLENOPHYTA (EUGLENOIDS)												
..CRYPTOPHYCEAE												
...CRYPTOMONIDALES												
....CRYPTOCHRYSIDACEAE												
....CHROMONAS	--	-	*	0	--	-	--	-	--	-	--	-
....CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	*	0	--	-	*	0	--	-	--	-
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENAEAE												
....TRACHFLOMONAS	--	-	*	0	--	-	--	-	# 25		*	0
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALES												
....CERATIACEAE												
....CERATIUM	--	-	--	-	--	-	--	-	--	-	*	0
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	*	0	--	-	*	0	--	-	--	-

* = Present in sample but not a dominant type
= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L8--Continued

DATE TIME	Phytoplankton analyses									
	AUG 4.77 1320	AUG 17.77 1145	SEP 7.77 1245	OCT 4.77 1405	OCT 21.77 1040					
DIVERSITY: DIVISION	1.3	0.8	0.0	1.0	0.4					
..CLASS	1.3	0.8	0.0	1.5	0.4					
..ORDER	1.3	1.5	1.0	2.3	1.5					
..FAMILY	1.9	1.5	1.4	2.3	1.5					
....GENUS	2.6	2.0	2.3	2.3	2.0					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
....MICRACTINIACEAE										
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
....OOCYSTACEAE										
....ANKISTRODESUMUS	* 0		--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
....SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-
....TETRASPORALES										
....PALMELLACEAE										
....SPHAEROCYSTIS	# 17		# 25		--	-	--	-	--	-
....VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
....STAUSTRUM	* 0		--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCEAE										
....CYCLOTELLA	* 0		--	-	--	-	--	-	--	-
....MELOSTIRA	--	-	--	-	--	-	# 20		# 25	
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
...PENNIALES										
....ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....ASTERIONELLA	--	-	--	-	--	-	# 20		# 25	
....FRAGILARIA	--	-	--	-	--	-	--	-	# 25	
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIAEAE										
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-
...TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	--	-	--	-
..CHRYSOPHYCEAE										
...CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	# 20		--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....AGMENELLUM	* 0		--	-	# 20		--	-	--	-
....ANACYSTIS	* 0		--	-	# 20		# 20		--	-
...HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	# 17		# 25		--	-	--	-	--	-
....APHANIZOMENON	# 17		# 25		# 20		# 20		--	-
...OSCILLATORIAEAE										
....ARTHROSPIRA	# 17		--	-	--	-	--	-	--	-
....OSCILLATORIA	# 17		--	-	# 20		--	-	--	-
....PHORMIMIDIUM	--	-	--	-	--	-	--	-	--	-
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....GOMPHOSPHAERIA	* 0		# 25		# 20		--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONODACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....TRACHELOMONAS	# 17		--	-	--	-	--	-	# 25	
PYRRHOPHYTA (FIRE ALGAE)										
..PINOPHYCEAE										
...PERIDINIALES										
...CEPATIACEAE										
....CFRATIUM	* 0		--	-	--	-	--	-	--	-
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

* = Present in sample but not a dominant type
 # = A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L9							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1210	1.60	76	7.7	5.0	13.9	109
06...	1211	3.30	77	7.7	5.0	13.9	109
06...	1212	6.60	77	7.7	5.0	13.9	109
06...	1213	9.80	77	7.7	5.0	13.9	109
06...	1214	11.6	77	7.7	5.0	13.9	109
27...	1400	1.60	82	8.8	12.0	12.6	117
27...	1402	3.30	83	8.8	12.0	12.6	117
27...	1404	6.60	83	8.8	12.0	12.5	116
27...	1406	9.80	81	7.9	11.0	11.2	102
27...	1408	11.6	81	8.1	10.5	11.5	103
May 1977							
16...	1440	1.60	87	8.3	15.5	11.2	111
16...	1441	3.30	87	8.3	15.0	11.2	110
16...	1442	6.60	87	8.3	15.0	11.2	110
June 1977							
13...	1440	1.60	89	6.0	18.5	10.0	106
13...	1442	3.30	89	5.9	18.5	10.0	106
13...	1444	6.60	89	5.7	18.0	10.1	106
13...	1446	9.80	89	5.7	18.0	10.0	105
Lake site L10							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1230	1.60	77	7.8	5.0	14.0	109
06...	1231	3.30	77	7.8	5.0	14.0	109
06...	1232	6.60	77	7.8	5.0	14.0	109
06...	1233	8.20	77	7.8	5.0	14.0	109
06...	1234	9.80	77	7.8	5.0	14.0	109
27...	1415	1.60	81	8.9	12.0	12.8	119
27...	1416	3.30	82	8.9	12.0	12.8	119
27...	1417	6.60	81	8.9	12.0	12.8	119
27...	1418	8.20	81	8.8	12.0	12.7	118
May 1977							
17...	1035	1.60	84	8.3	16.5	11.6	118
17...	1036	3.30	84	8.4	16.0	11.6	117
17...	1038	6.60	82	8.3	15.0	11.8	116
17...	1039	8.20	82	8.4	14.5	11.6	113
June 1977							
14...	1140	1.60	87	6.9	19.5	10.4	112
14...	1142	3.30	87	6.8	19.5	10.4	112
14...	1144	6.60	87	6.6	19.0	10.5	112
14...	1146	8.20	87	6.7	18.5	10.6	112

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11												
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature ($^{\circ}$ C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Bicar- bonate FET-fld (mg/L as HCO ₃)	Alka- linity field (mg/L as CaCO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
April 1977												
06...	1245	1.60	76	7.8	5.0	1.30	14.0	109	18	15	.5	.20
06...	1247	3.30	76	7.8	5.0	--	14.0	109	--	--	--	--
06...	1248	6.60	76	7.8	5.0	--	14.0	109	--	--	--	--
06...	1249	9.80	76	7.8	5.0	--	13.9	109	--	--	--	--
06...	1250	13.2	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1252	16.5	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1255	17.2	--	--	--	--	--	--	19	16	--	.21
06...	1257	20.0	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1259	23.1	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1301	26.4	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1302	30.0	76	7.7	5.0	--	13.9	109	--	--	--	--
06...	1304	33.0	78	7.7	5.0	--	13.9	109	--	--	--	--
06...	1305	34.7	76	7.7	5.0	--	13.8	108	19	16	.6	.20
27...	1425	1.60	82	8.9	12.0	1.50	12.8	119	20	16	.0	<.10
27...	1427	3.30	82	8.9	12.0	--	12.9	120	--	--	--	--
27...	1428	6.60	82	8.9	11.5	--	12.8	117	--	--	--	--
27...	1430	9.80	82	8.9	11.5	--	12.8	117	19	16	.0	<.10
27...	1432	13.2	81	8.8	11.0	--	12.7	118	--	--	--	--
27...	1435	16.5	79	7.7	10.0	--	11.6	103	19	16	.6	.03
27...	1436	20.0	79	7.1	9.5	--	11.3	98	--	--	--	--
27...	1437	23.1	79	6.6	8.5	--	10.8	92	--	--	--	--
27...	1438	26.4	80	6.4	8.5	--	9.5	81	--	--	--	--
27...	1439	30.0	80	6.4	8.5	--	9.2	80	--	--	--	--
27...	1440	33.0	82	6.4	8.0	--	7.1	60	22	18	14	.06
May 1977												
17...	1100	1.60	86	8.5	16.0	1.70	12.1	122	--	--	--	<.10
17...	1101	3.30	87	8.8	16.0	--	12.2	123	--	--	--	--
17...	1105	6.60	85	8.8	14.5	--	12.9	125	20	16	.0	<.10
17...	1106	9.80	84	8.6	13.5	--	12.4	118	--	--	--	--
17...	1110	11.0	--	--	--	--	--	--	25	21	--	<.10
17...	1111	13.2	84	7.2	13.0	--	11.2	106	--	--	--	--
17...	1112	16.5	84	6.8	13.0	--	10.4	98	--	--	--	--
17...	1113	20.0	84	6.8	12.5	--	10.1	94	--	--	--	--
17...	1114	23.1	84	6.7	12.5	--	9.8	92	--	--	--	--
17...	1115	26.4	83	6.6	12.5	--	9.4	89	--	--	--	--
17...	1119	30.0	85	6.5	12.5	--	9.0	84	--	--	--	--
17...	1120	33.0	86	6.5	12.5	--	12.5	65	23	19	12	.01
June 1977												
14...	1200	1.60	87	7.2	19.5	3.8	10.4	112	--	19	2.3	<.10
14...	1201	3.30	87	7.2	19.0	--	10.4	111	--	--	--	--
14...	1202	6.60	87	7.2	18.5	--	10.4	110	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued											
	Time	Sam- pling depth	Spe- cific con- duct- ance	pH (stand- ard units)	Temper- ature	Trans- par- ency (secchi disk)	Oxygen, dis- solved	Oxygen, dis- solved (per- cent satur- ation)	Alka- linity field (mg/L as CACO3)	Carbon dioxide dis- solved (mg/L as CO2)	Nitro- gen, NO2+NO3 total (mg/L as N)
Date		(ft)	(μS/cm)		(°C)	(m)	(mg/L)				
June 1977											
14...	1203	9.80	86	7.2	17.5	--	10.2	106	--	--	--
14...	1205	13.1	86	7.2	17.0	--	10.0	103	19	2.3	<.10
14...	1206	16.5	86	7.1	16.0	--	8.0	81	--	--	--
14...	1210	19.7	85	7.2	15.0	--	5.0	49	19	2.3	<.10
14...	1211	23.1	85	7.1	14.0	--	2.0	19	--	--	--
14...	1212	26.4	85	7.1	13.5	--	.0	0	--	--	--
14...	1213	30.0	90	7.0	12.5	--	.0	0	--	--	--
14...	1215	31.2	92	6.9	12.5	--	.1	1	22	5.4	<.10
July 1977											
11...	1300	1.60	97	7.9	25.0	2.40	9.7	115	20	.5	<.10
11...	1302	3.30	97	7.9	25.0	--	9.8	117	--	--	--
11...	1304	6.60	97	7.9	25.0	--	9.8	117	--	--	--
11...	1305	9.80	97	7.9	25.0	--	9.8	117	19	.5	.01
11...	1307	13.0	94	7.8	22.5	--	8.8	101	--	--	--
11...	1309	16.0	92	7.8	19.0	--	3.8	40	--	--	--
11...	1310	18.0	--	--	--	--	--	--	20	--	<.10
11...	1312	20.0	91	7.8	16.5	--	.4	4	--	--	--
11...	1314	23.0	89	7.9	14.5	--	1.0	10	--	--	--
11...	1315	26.0	92	7.9	13.5	--	.0	0	23	.6	<.10
11...	1318	30.0	101	7.9	13.0	--	.0	0	--	--	--
11...	1320	31.0	101	7.9	13.0	--	.0	0	26	.6	.03
August 1977											
05...	1045	1.60	95	7.6	25.0	2.40	9.3	111	20	1.0	<.10
05...	1046	3.30	95	7.4	25.0	--	9.3	111	--	--	--
05...	1047	6.60	95	7.2	24.5	--	9.3	110	--	--	--
05...	1048	9.80	94	7.0	24.0	--	9.0	106	--	--	--
05...	1049	13.0	94	6.9	23.5	--	8.4	98	--	--	--
05...	1050	16.0	93	6.9	22.0	--	6.8	77	20	4.9	<.10
05...	1052	20.0	88	6.9	19.0	--	.6	6	--	--	--
05...	1055	21.0	--	--	--	--	--	--	19	--	<.10
05...	1057	23.0	87	7.0	16.5	--	.0	0	--	--	--
05...	1059	26.0	100	7.0	14.5	--	.0	0	--	--	--
05...	1100	28.0	--	--	--	--	--	--	23	--	<.10
05...	1102	30.0	104	7.0	14.5	--	.0	0	--	--	--
05...	1105	31.0	108	7.0	13.0	--	.0	0	27	5.2	.01
September 1977											
07...	1310	1.60	87	--	24.0	3.7	8.5	100	20	--	<.10
07...	1311	3.30	84	--	23.5	--	8.5	99	--	--	--
07...	1312	6.60	85	--	23.0	--	8.4	97	--	--	--
07...	1315	9.80	85	--	23.0	--	8.2	94	20	--	<.10
07...	1316	13.0	87	--	22.0	--	6.8	77	--	--	--
07...	1320	16.0	86	--	21.0	--	4.2	47	20	--	<.10

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature ($^{\circ}$ C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Alka- linity field as CAC03	Carbon dioxide dis- solved (mg/L) as C02)	Nitro- gen, NO2+NO3 total (mg/L) as N)
September 1977											
07...	1321	20.0	90	--	19.5	--	.6	6	--	--	--
07...	1325	23.0	89	--	17.0	--	.2	2	22	--	<.10
07...	1326	26.0	112	--	15.0	--	.3	3	--	--	--
07...	1330	30.0	124	--	14.0	--	.4	4	32	--	<.10
October 1977											
05...	1145	1.60	111	--	16.5	1.90	7.6	78	23	--	.03
05...	1146	3.30	113	--	16.0	--	7.6	77	--	--	--
05...	1147	6.60	113	--	16.0	--	7.2	73	--	--	--
05...	1150	9.80	115	--	15.5	--	6.8	67	25	--	.03
05...	1151	13.2	115	--	15.5	--	6.6	65	--	--	--
05...	1155	16.4	115	--	15.5	--	6.6	65	24	--	.04
05...	1156	19.8	115	--	15.5	--	6.6	65	--	--	--
05...	1200	23.0	116	--	15.5	--	6.6	65	25	--	.03
05...	1201	26.0	116	--	15.5	--	6.9	68	--	--	--
05...	1205	30.0	116	--	15.5	--	7.0	69	--	--	.04
21...	1105	1.60	90	7.1	12.0	1.80	7.1	65	22	3.4	.07
21...	1106	3.30	90	7.1	12.0	--	7.1	65	--	--	--
21...	1107	6.60	90	7.1	12.0	--	7.0	64	--	--	--
21...	1110	9.80	90	7.1	12.0	--	7.0	64	22	3.4	.06
21...	1111	13.2	90	7.0	12.0	--	7.0	64	--	--	--
21...	1115	16.4	90	7.1	12.0	--	7.0	64	23	3.5	.06
21...	1116	20.0	90	7.0	12.0	--	6.9	63	--	--	--
21...	1117	23.0	90	7.0	12.0	--	6.9	63	--	--	--
21...	1120	26.2	90	7.0	12.0	--	6.8	62	22	4.3	.07
21...	1121	30.0	90	7.0	11.5	--	6.8	61	--	--	--
21...	1125	31.2	90	7.0	11.5	--	6.8	61	22	4.3	.08
November 1977											
16...	1350	1.60	85	7.2	9.5	--	4.9	44	--	--	--
16...	1351	3.30	85	7.2	9.5	--	4.9	44	--	--	--
16...	1352	6.60	85	7.2	9.5	--	4.8	43	--	--	--
16...	1353	9.80	85	7.2	9.5	--	4.8	43	--	--	--
16...	1354	13.2	85	7.2	9.5	--	4.8	43	--	--	--
16...	1355	16.0	85	7.2	9.5	--	4.8	43	--	--	--
16...	1356	20.0	85	7.2	9.5	--	4.8	43	--	--	--
16...	1357	23.0	85	7.2	9.5	--	4.7	41	--	--	--
16...	1358	26.0	85	7.2	9.5	--	4.7	41	--	--	--
16...	1359	30.0	85	7.2	9.5	--	4.6	40	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued									
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as ND3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)
April 1977									
06...	1245	1.60	.090	.31	.60	2.7	.010	<.010	5.2
06...	1247	3.30	--	--	--	--	--	--	--
06...	1248	6.60	--	--	--	--	--	--	--
06...	1249	9.80	--	--	--	--	--	--	--
06...	1250	13.2	--	--	--	--	--	--	--
06...	1252	16.5	--	--	--	--	--	--	--
06...	1255	17.2	.080	.32	.61	2.7	.010	<.010	3.3
06...	1257	20.0	--	--	--	--	--	--	--
06...	1259	23.1	--	--	--	--	--	--	--
06...	1301	26.4	--	--	--	--	--	--	--
06...	1302	30.0	--	--	--	--	--	--	--
06...	1304	33.0	--	--	--	--	--	--	--
06...	1305	34.7	.080	.42	.70	3.1	.010	<.010	3.0
27...	1425	1.60	.040	.51	.55	2.4	.020	<.010	--
27...	1427	3.30	--	--	--	--	--	--	--
27...	1428	6.60	--	--	--	--	--	--	--
27...	1430	9.80	.080	.50	.47	2.1	.030	<.010	--
27...	1432	13.2	--	--	--	--	--	--	--
27...	1435	16.5	.040	.41	.48	2.1	.020	<.010	--
27...	1436	20.0	--	--	--	--	--	--	--
27...	1437	23.1	--	--	--	--	--	--	--
27...	1438	26.4	--	--	--	--	--	--	--
27...	1439	30.0	--	--	--	--	--	--	--
27...	1440	33.0	.220	.58	.86	3.8	.040	<.010	--
May 1977									
17...	1100	1.60	.030	.35	.38	1.7	.020	<.010	--
17...	1101	3.30	--	--	--	--	--	--	--
17...	1105	6.60	.050	.40	.45	2.0	.030	<.010	--
17...	1106	9.80	--	--	--	--	--	--	--
17...	1110	11.0	.060	.37	.43	1.9	.030	<.010	--
17...	1111	13.2	--	--	--	--	--	--	--
17...	1112	16.5	--	--	--	--	--	--	--
17...	1113	20.0	--	--	--	--	--	--	--
17...	1114	23.1	--	--	--	--	--	--	--
17...	1115	26.4	--	--	--	--	--	--	--
17...	1119	30.0	--	--	--	--	--	--	--
17...	1120	33.0	.090	.44	.54	2.4	.040	<.010	--
June 1977									
14...	1200	1.60	.040	.35	.39	1.7	.020	<.010	--
14...	1201	3.30	--	--	--	--	--	--	--
14...	1202	6.60	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued									
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)
June 1977									
14...	1203	9.80	--	--	--	--	--	--	--
14...	1205	13.1	.080	.28	.36	1.6	.020	<.010	--
14...	1206	16.5	--	--	--	--	--	--	--
14...	1210	19.7	.090	.20	.29	1.3	.030	<.010	--
14...	1211	23.1	--	--	--	--	--	--	--
14...	1212	26.4	--	--	--	--	--	--	--
14...	1213	30.0	--	--	--	--	--	--	--
14...	1215	31.2	.110	.39	.50	2.2	.060	<.010	--
July 1977									
11...	1300	1.60	.030	.43	.46	2.0	.020	--	--
11...	1302	3.30	--	--	--	--	--	--	--
11...	1304	6.60	--	--	--	--	--	--	--
11...	1305	9.80	.050	.45	.51	2.3	.020	--	--
11...	1307	13.0	--	--	--	--	--	--	--
11...	1309	16.0	--	--	--	--	--	--	--
11...	1310	18.0	.110	.46	.57	2.5	.020	--	--
11...	1312	20.0	--	--	--	--	--	--	--
11...	1314	23.0	--	--	--	--	--	--	--
11...	1315	26.0	.140	.58	.72	3.2	.060	--	--
11...	1318	30.0	--	--	--	--	--	--	--
11...	1320	31.0	.310	.89	1.2	5.4	.130	--	--
August 1977									
05...	1045	1.60	.020	.49	.51	2.3	.020	--	5.6
05...	1046	3.30	--	--	--	--	--	--	--
05...	1047	6.60	--	--	--	--	--	--	--
05...	1048	9.80	--	--	--	--	--	--	--
05...	1049	13.0	--	--	--	--	--	--	--
05...	1050	16.0	.030	.38	.41	1.8	.030	--	5.3
05...	1052	20.0	--	--	--	--	--	--	--
05...	1055	21.0	.040	.48	.52	2.3	.030	--	4.1
05...	1057	23.0	--	--	--	--	--	--	--
05...	1059	26.0	--	--	--	--	--	--	--
05...	1100	28.0	.040	1.1	1.1	4.9	.050	--	5.1
05...	1102	30.0	--	--	--	--	--	--	--
05...	1105	31.0	.240	.76	1.0	4.5	.100	--	10
September 1977									
07...	1310	1.60	.010	.26	.27	1.2	.020	--	--
07...	1311	3.30	--	--	--	--	--	--	--
07...	1312	6.60	--	--	--	--	--	--	--
07...	1315	9.80	.030	.27	.30	1.3	.020	--	--
07...	1316	13.0	--	--	--	--	--	--	--
07...	1320	16.0	.010	.43	.44	1.9	.020	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued							
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)
September 1977							
07...	1321	20.0	--	--	--	--	--
07...	1325	23.0	.080	.49	.57	3.5	.050
07...	1326	26.0	--	--	--	--	--
07...	1330	30.0	.650	.35	1.0	4.4	.180
October 1977							
05...	1145	1.60	.140	.39	.56	2.5	.110
05...	1146	3.30	--	--	--	--	--
05...	1147	6.60	--	--	--	--	--
05...	1150	9.80	.140	.38	.55	2.4	.150
05...	1151	13.2	--	--	--	--	--
05...	1155	16.4	.140	.40	.58	2.6	.030
05...	1156	19.8	--	--	--	--	--
05...	1200	23.0	.140	.37	.54	2.4	.030
05...	1201	26.0	--	--	--	--	--
05...	1205	30.0	.130	.36	.53	2.3	.070
21...	1105	1.60	.140	.61	.82	3.6	.040
21...	1106	3.30	--	--	--	--	--
21...	1107	6.60	--	--	--	--	--
21...	1110	9.80	.170	.53	.76	3.4	.040
21...	1111	13.2	--	--	--	--	--
21...	1115	16.4	.160	.40	.62	2.7	.040
21...	1116	20.0	--	--	--	--	--
21...	1117	23.0	--	--	--	--	--
21...	1120	26.2	.150	.48	.70	3.1	.030
21...	1121	30.0	--	--	--	--	--
21...	1125	31.2	.160	.60	.84	3.7	.040
November 1977							
16...	1350	1.60	--	--	--	--	--
16...	1351	3.30	--	--	--	--	--
16...	1352	6.60	--	--	--	--	--
16...	1353	9.80	--	--	--	--	--
16...	1354	13.2	--	--	--	--	--
16...	1355	16.0	--	--	--	--	--
16...	1356	20.0	--	--	--	--	--
16...	1357	23.0	--	--	--	--	--
16...	1358	26.0	--	--	--	--	--
16...	1359	30.0	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued

Phytoplankton analyses

DATE TIME	APR 6,77 1245	APR 27,77 1200	APR 27,77 1425	MAY 17,77 1100	JUN 14,77 1200	
DIVERSITY: DIVISION	0.9	0.9	0.9	1.5	0.8	
..CLASS	0.9	0.9	0.9	1.5	0.8	
...ORDER	1.6	0.9	0.9	1.5	1.5	
...FAMILY	1.6	1.6	1.6	2.0	2.0	
....GENUS	1.6	1.6	1.6	2.0	2.0	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...MICRACTINIACEAF						
....MICRACTINIUM	--	-	* 0	--	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	* 0	--	--	-
...CHODATELLA	--	-	* 0	--	# 25	--
...CLOSTERIOPSIS	--	-	* 0	--	--	-
...DICTYOSPHAERIUM	--	-	--	-	* 0	--
...NIPHROCITIUM	--	-	--	-	* 0	--
...TETRAEDRON	--	-	* 0	--	* 0	--
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	* 0	--	* 0	--
...TETRASTRUM	--	-	* 0	--	--	-
..TETRASPORALES						
...PALMELLACEAE						
...SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	* 0	--	--	-
..ZYGNEATALES						
...DESMIDIACEAE						
....CLOSTERIUM	--	-	--	-	--	-
...STAUSTRUM	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	# 33	--	* 0	--	* 0	--
....MELOSIRA	--	-	* 0	--	--	-
..PENNALES						
...FRAGILARIACEAE						
....ASTERIONELLA	# 33	--	# 33	--	# 25	--
....FRAGILARIA	--	-	--	-	--	-
...SYNEDRA	--	-	--	-	* 0	--
...NITZSCHACEAE						
....NITZSCHIA	--	-	* 0	--	* 0	--
..CHRYSOPHYCEAE						
...CHRYSOMONADALES						
...OCHROMONADACEAE						
....DINOBYRON	--	-	--	-	--	-
...SYNURACEAE						
....SYNURA	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
...CHROCCOCCAEAE						
....AGMENELLUM	--	-	--	-	--	-
...ANACYSTIS	--	-	* 0	--	--	-
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...APHANIZOMENON	--	-	# 33	--	# 25	--
...OSCILLATORIACEAE						
....ARTHROSPIRA	--	-	--	-	--	-
...LYNGBYA	--	-	--	-	--	-
...OSCILLATORIA	# 33	--	# 33	--	# 25	--
...CHROCCOCCALES						
...CHROCCOCCAEAE						
...GOMPHOSPHAERIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	* 0	--	--	-
...CRYPTOMONODACEAE						
....CRYPTOMONAS	--	-	* 0	--	--	-
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELONONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
...CEPATIACEAE						
....CERATIUM	--	-	--	-	--	-
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	* 0	--
...PERIDINIACEAE						
....PERIDINIUM	--	-	* 0	--	--	-

* = Present in sample but not a dominant type

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L11--Continued

Phytoplankton analyses											
DATE TIME	JUL 11,77 1300	AUG 5,77 1245	AUG 17,77 1150	SEP 7,77 1310	OCT 21,77 1105						
DIVERSITY: DIVISION	0.3	1.3	1.4	0.7	0.9						
..CLASS	0.3	1.3	1.4	0.7	1.6						
..ORDER	1.1	1.3	1.9	1.4	1.6						
...FAMILY	1.5	1.9	1.9	1.4	1.6						
....GENUS	2.2	2.6	2.3	2.3	1.6						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	
CHLOROPHYTA (GREEN ALGAE)											
..CHLOROPHYCEAE											
...CHLOROCOCCALES											
...CHARACIACEAE											
....SCHROEDERIA	200	1	--	-	--	-	--	-	--	-	
...MICRACTINIACEAE											
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	
...OOCYSTACEAE											
....ANKISTRODESMUS	--	-	*	0	--	-	--	-	--	-	
...CHODATELLA	--	-	--	-	--	-	--	-	--	-	
...CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-	
...DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	
...NEPHROCITIUM	--	-	--	-	--	-	--	-	--	-	
...TETRAEDRON	--	-	--	-	--	-	--	-	--	-	
...SCENEDESMACEAE											
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-	
...TETRASTRUM	--	-	--	-	--	-	--	-	--	-	
...TETRASPORALES											
...PALMELLACEAE											
...SPHAEROCYSTIS	480	2	#	17	--	-	--	-	--	-	
...VOLVOCALES											
...CHLAMYDOMONADACEAE											
...CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-	
...ZYGNEMATALES											
...DESMIDIACEAE											
...CLOSTERIUM	--	-	*	0	--	-	--	-	--	-	
...STAUSTRUM	*	0	*	0	--	-	--	-	--	-	
CHRYSTOPHYTA											
..BACILLARIOPHYCEAE											
...CENTRALES											
...COSCINODISCEAE											
...CYCLOTELLA	--	-	--	-	--	-	--	-	--	-	
...MELOSIRA	--	-	--	-	--	-	--	-	#	33	
...PENNALES											
...FRAGILARIACEAE											
...ASTERIONELLA	*	0	--	-	--	-	--	-	--	-	
...FRAGILARIA	--	-	*	0	#	20	--	-	--	-	
...SYNEDRA	--	-	--	-	--	-	--	-	--	-	
...NITZSCHIAEAE											
...NITZSCHIA	--	-	--	-	--	-	--	-	--	-	
..CHRYSTOPHYCEAE											
...CHRYSSOMONADALES											
...OCHROMONADACEAE											
...DINOBRYON	--	-	*	0	--	-	--	-	#	33	
...SYNURACEAE											
...SYNURA	*	0	--	-	--	-	--	-	--	-	
CYANOPHYTA (BLUE-GREEN ALGAE)											
..CYANOPHYCEAE											
...CHROCCOCCALES											
...CHROCCOCCACEAE											
....AGMENELLUM	300	1	*	0	--	-	#	20	--	-	
...ANACYSTIS	930	3	--	-	--	-	#	20	--	-	
...HORMOGONALES											
...NOSTOCACEAE											
....ANABAENA	3000	9	#	17	#	20	--	-	--	-	
...APHANIZOMENON	1000	3	#	17	#	20	--	-	--	-	
...OSCILLATORIACEAE											
...ARTHROSPIRA	--	-	#	17	--	-	--	-	--	-	
...LYNGBYA	3500	11	--	-	--	-	--	-	--	-	
...OSCILLATORIA	17000#	53	#	17	--	-	#	20	--	-	
...CHROCCOCCALES											
...CHROCCOCCACEAE											
...GOMPHOSPHAERIA	5000#	16	*	0	#	20	#	20	--	-	
EUGLENOPHYTA (EUGLENIDS)											
..CRYPTOPHYCEAE											
...CRYPTOMONIDALES											
...CRYPTOCHRYSIDACEAE											
...CHROOMONAS	300	1	--	-	--	-	--	-	--	-	
...CRYPTOMONODACEAE											
...CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	
..EUGLENOPHYCEAE											
...EUGLENALES											
...EUGLENACEAE											
...TRACHELOMONAS	*	0	#	17	#	20	#	20	#	33	
PYRRHOPHYTA (FIRE ALGAE)											
..DINOPHYCEAE											
...PELIDIALES											
...CEPATIACEAE											
...CERATIUM	*	0	*	0	--	-	--	-	--	-	
...GLENODINIACEAE											
...GLENODINIUM	--	-	--	-	--	-	--	-	--	-	
...PEPIDINIACEAE											
...PERIDINIUM	--	-	--	-	--	-	--	-	--	-	

* = Present in sample but not a dominant type.

= Adominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L12							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1330	1.60	76	7.9	5.0	14.0	109
06...	1331	3.30	76	7.8	5.0	13.9	109
06...	1332	6.60	76	7.8	5.0	13.9	109
06...	1333	9.80	76	7.7	5.0	13.9	109
06...	1334	13.2	76	7.7	5.0	13.9	109
06...	1335	16.5	76	7.7	5.0	13.9	109
06...	1336	20.0	76	7.7	5.0	13.9	109
06...	1337	23.1	76	7.7	5.0	13.9	109
06...	1338	26.4	76	7.7	5.0	13.9	109
06...	1339	30.0	76	7.6	5.0	13.9	109
06...	1340	31.4	76	7.6	5.0	13.8	108
27...	1500	1.60	84	8.8	12.5	12.5	117
27...	1502	3.30	84	8.9	11.5	13.0	119
27...	1504	6.60	83	8.9	11.5	12.8	117
27...	1506	9.80	82	8.7	11.0	12.2	110
27...	1508	13.2	80	8.2	10.5	11.8	105
27...	1510	16.5	81	7.8	10.0	11.5	102
27...	1512	20.0	81	7.2	9.5	11.2	97
27...	1514	23.1	81	6.8	9.0	10.6	91
27...	1516	26.4	81	6.8	8.5	10.3	87
27...	1518	28.0	81	6.8	8.5	10.0	85
May 1977							
17...	1135	1.60	87	8.4	16.0	12.0	121
17...	1136	3.30	87	8.5	15.5	12.1	120
17...	1137	6.60	86	8.7	14.0	12.6	121
17...	1138	9.80	84	8.5	14.0	12.3	115
17...	1139	13.2	84	7.9	13.5	11.8	112
17...	1140	16.5	84	8.4	13.0	11.0	104
17...	1141	20.0	84	6.9	12.5	10.4	97
17...	1142	23.1	84	6.8	12.5	10.2	95
17...	1143	26.4	84	6.7	12.5	9.6	90
17...	1144	28.0	84	6.6	12.5	9.1	85
June 1977							
14...	1240	1.60	90	7.3	20.5	10.2	112
14...	1242	3.30	89	7.3	19.0	10.4	111
14...	1244	6.60	89	7.4	18.0	10.5	111
14...	1246	9.80	89	7.3	17.5	10.6	110
14...	1248	13.2	88	7.2	16.5	9.2	94
14...	1250	15.0	88	7.2	16.5	8.5	87

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L13							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1425	1.60	74	8.0	5.0	14.1	110
06...	1426	3.30	74	8.0	5.0	14.1	110
06...	1427	6.60	74	8.0	5.0	14.1	110
06...	1428	9.80	74	8.0	5.0	14.0	109
06...	1429	13.2	75	8.0	5.0	14.0	109
06...	1430	16.5	75	8.0	5.0	14.0	109
06...	1431	20.0	75	8.0	5.0	14.0	109
06...	1432	23.1	75	8.0	5.0	14.0	109
06...	1433	26.4	75	8.0	5.0	14.0	109
06...	1434	30.0	75	8.0	5.0	14.0	109
06...	1435	33.0	75	8.0	5.0	14.0	109
06...	1436	36.3	75	8.0	5.0	14.0	109
27...	1510	1.60	83	8.9	12.0	12.7	118
27...	1512	3.30	83	8.9	11.5	12.8	117
27...	1514	6.60	81	8.5	10.5	12.2	109
27...	1516	9.80	80	8.4	10.0	11.9	105
27...	1518	13.2	80	7.3	9.5	11.4	99
27...	1520	16.5	80	7.0	9.0	11.2	97
27...	1522	20.0	80	6.9	9.0	11.1	96
27...	1524	23.1	80	6.7	9.0	10.8	93
27...	1526	26.4	81	6.6	8.5	10.2	86
27...	1528	30.0	79	6.3	8.5	10.2	86
27...	1530	33.0	81	6.8	8.5	9.2	80
May 1977							
17...	1205	1.60	88	8.6	15.5	12.2	121
17...	1206	3.30	88	8.7	15.0	12.4	122
17...	1207	6.60	88	8.6	14.5	12.2	118
17...	1208	9.80	86	8.5	13.5	12.3	117
17...	1209	13.2	85	6.9	13.0	10.4	98
17...	1210	16.5	85	6.8	12.5	10.2	95
17...	1211	20.0	85	6.7	12.5	9.8	92
17...	1212	23.1	85	6.7	12.5	9.6	90
17...	1213	26.4	85	6.6	12.5	8.9	83
17...	1214	30.0	86	6.5	12.5	8.2	77
17...	1215	33.0	86	6.5	12.5	8.1	76
June 1977							
14...	1255	1.60	90	7.2	20.0	10.1	110
14...	1257	3.30	89	7.3	18.5	10.3	101
14...	1259	6.60	89	7.3	18.0	10.4	109
14...	1300	9.80	88	7.3	16.5	9.8	100
14...	1302	13.2	88	7.2	16.0	9.0	91
14...	1304	16.5	88	7.2	16.0	8.3	84
14...	1306	20.0	88	7.1	16.0	7.3	74
14...	1308	23.1	88	7.1	14.0	1.6	15
14...	1310	26.4	88	7.1	13.0	.0	0
14...	1312	30.0	90	7.1	12.5	.0	0
14...	1314	33.0	94	7.2	12.5	.0	0

Table 11.--Chemical, and biological characteristics of lake water--continued

Lake site L14												
			Spe- cific con- duct- ance	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved satur- ation)	Bicar- bonate FET-fld (mg/L as HCO3)	Alka- linity field (mg/L as CaCO3)	Carbon dioxide dis- solved (mg/L as CO2)	Nitro- gen, NO2+NO3 total (mg/L as N)
Date	Time	(ft)	(μS/cm)									
April 1977												
06...	1455	1.60	76	8.0	5.0	1.20	14.0	109	20	16	.3	.23
06...	1456	3.30	76	8.0	5.0	--	14.0	109	--	--	--	--
06...	1457	6.60	76	8.0	5.0	--	14.0	109	--	--	--	--
06...	1458	9.80	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1459	13.2	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1501	16.5	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1505	20.0	76	8.0	5.0	--	13.9	109	19	16	.3	.20
06...	1506	23.1	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1507	26.4	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1508	30.0	76	8.0	5.0	--	13.9	109	--	--	--	--
06...	1509	33.0	76	8.0	5.0	--	13.8	108	--	--	--	--
06...	1510	36.3	76	8.0	5.0	--	13.8	108	--	--	--	--
06...	1515	38.0	--	--	--	--	--	--	19	16	--	.21
06...	1516	39.0	76	8.1	5.0	--	13.7	108	--	--	--	--
27...	1540	1.60	86	8.9	11.5	1.60	12.8	117	21	17	.0	<.10
27...	1541	3.30	85	8.9	11.5	--	12.9	118	--	--	--	--
27...	1545	6.60	85	8.8	11.0	--	12.6	115	19	16	.0	.01
27...	1546	9.80	84	8.7	10.0	--	12.3	109	--	--	--	--
27...	1547	13.2	83	8.1	9.5	--	11.7	101	--	--	--	--
27...	1550	15.0	--	--	--	--	--	--	21	17	--	.02
27...	1551	16.5	83	7.0	9.0	--	11.3	97	--	--	--	--
27...	1552	20.0	83	6.8	9.0	--	11.1	96	--	--	--	--
27...	1553	23.1	83	6.7	8.5	--	10.6	90	--	--	--	--
27...	1554	26.4	82	6.6	8.0	--	10.2	86	--	--	--	--
27...	1555	30.0	83	6.6	8.0	--	10.3	87	--	--	--	--
27...	1556	33.0	83	6.5	8.0	--	9.6	81	--	--	--	--
27...	1557	36.3	85	6.3	8.0	--	7.9	66	--	--	--	--
27...	1600	38.0	86	6.3	8.0	--	7.2	61	20	16	16	.07
May 1977												
04...	1325	40.0	--	--	--	--	--	--	--	--	--	--
17...	1225	1.60	90	8.5	16.5	1.60	12.1	123	23	19	.1	<.10
17...	1226	3.30	90	8.5	16.0	--	12.2	123	--	--	--	--
17...	1230	6.60	90	8.7	15.0	--	12.6	123	27	22	.0	<.10
17...	1231	9.80	87	7.4	13.0	--	11.3	107	--	--	--	--
17...	1235	11.0	--	--	--	--	--	--	24	20	--	<.10
17...	1236	13.2	87	7.0	13.0	--	10.8	102	--	--	--	--
17...	1237	16.5	87	6.8	12.5	--	10.2	95	--	--	--	--
17...	1238	20.0	87	6.7	12.5	--	9.8	92	--	--	--	--
17...	1239	23.1	87	6.6	12.5	--	9.2	86	--	--	--	--
17...	1240	26.4	87	6.6	12.5	--	9.0	84	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued												
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance ($\mu S/cm$)	pH (stand- ard units)	Temper- ature ($^{\circ}C$)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved satur- ation (%)	Bicar- bonate FET-fld as (mg/L HCO ₃)	Alka- linity field as (mg/L CACO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
May 1977												
17...	1241	30.0	87	6.5	12.5	--	8.6	80	--	--	--	--
17...	1242	33.0	87	6.5	12.0	--	8.1	75	--	--	--	--
17...	1243	36.3	87	6.4	12.0	--	7.7	71	--	--	--	--
17...	1245	38.0	87	6.4	12.0	--	7.2	66	24	20	15	.02
June 1977												
14...	1315	1.60	91	7.2	20.0	3.7	10.2	111	--	18	2.2	<.10
14...	1316	3.30	90	7.2	18.5	--	10.5	111	--	--	--	--
14...	1318	6.60	89	7.2	17.5	--	10.5	109	--	--	--	--
14...	1320	9.80	88	7.3	17.0	--	10.4	107	--	18	1.7	<.10
14...	1322	13.2	88	7.2	16.5	--	9.8	100	--	--	--	--
14...	1323	16.5	88	7.2	16.0	--	8.6	87	--	--	--	--
14...	1325	19.7	88	7.2	15.5	--	6.4	64	--	18	2.2	<.10
14...	1327	23.1	88	7.2	14.0	--	2.2	21	--	--	--	--
14...	1329	26.4	88	7.2	13.0	--	.0	0	--	--	--	--
14...	1330	30.0	90	7.2	12.5	--	.0	0	--	--	--	--
14...	1332	33.0	95	7.2	12.0	--	.0	0	--	--	--	--
14...	1333	36.3	103	7.2	11.5	--	.0	0	--	--	--	--
14...	1335	37.7	106	7.2	11.5	--	.0	0	--	25	3.1	<.10
July 1977												
11...	1340	1.60	97	7.9	25.0	2.90	9.8	117	--	--	--	<.10
11...	1342	3.30	97	7.9	25.0	--	10.0	119	--	--	--	--
11...	1344	6.60	97	7.9	24.5	--	10.0	118	--	--	--	--
11...	1345	9.80	95	7.9	23.0	--	9.7	111	--	19	.5	<.10
11...	1347	13.0	93	7.7	21.0	--	7.0	78	--	--	--	--
11...	1349	16.0	91	7.8	19.0	--	3.6	38	--	--	--	--
11...	1350	20.0	91	7.9	16.5	--	.6	6	--	20	.5	<.10
11...	1352	23.0	90	7.9	15.0	--	.2	2	--	--	--	--
11...	1353	26.0	95	8.0	13.5	--	.0	0	--	--	--	--
11...	1354	30.0	102	8.0	12.5	--	.0	0	--	--	--	--
11...	1355	33.0	107	7.9	12.0	--	.0	0	--	37	.9	<.10
11...	1357	36.0	115	7.9	12.0	--	.0	0	--	--	--	--
11...	1400	38.0	115	7.9	12.0	--	.0	0	--	35	.9	<.10
August 1977												
05...	1115	1.60	96	7.7	25.0	2.70	9.2	110	--	20	.8	.01
05...	1116	3.30	96	7.7	25.0	--	9.2	110	--	--	--	--
05...	1118	6.60	96	7.4	24.5	--	9.2	109	--	--	--	--
05...	1119	9.80	96	7.1	24.0	--	9.0	106	--	--	--	--
05...	1120	13.0	95	7.1	23.0	--	8.0	92	--	19	2.9	<.10
05...	1122	16.0	94	7.1	21.5	--	5.6	63	--	--	--	--
05...	1125	20.0	90	7.3	19.0	--	.5	5	--	20	1.9	<.10
05...	1127	23.0	85	7.3	15.0	--	.0	0	--	--	--	--
05...	1128	26.0	105	7.3	14.0	--	.0	0	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Alka- linity field (mg/L as CAC03)	Carbon dioxide dis- solved (mg/L as CO2)	Nitro- gen, NO2+NO3 total (mg/L as N)
August 1977											
05...	1129	30.0	113	7.3	13.0	--	.0	0	--	--	--
05...	1130	33.0	118	7.3	12.0	--	.0	0	41	4.0	<.10
05...	1133	36.0	123	7.3	12.0	--	.0	0	--	--	--
05...	1135	38.0	131	7.3	11.5	--	.0	0	46	4.5	<.10
September 1977											
07...	1340	1.60	87	--	24.0	3.6	8.6	101	20	--	<.10
07...	1341	3.30	88	--	23.5	--	8.6	100	--	--	--
07...	1342	6.60	88	--	23.5	--	8.5	99	--	--	--
07...	1345	9.80	88	--	23.0	--	8.5	98	20	--	.10
07...	1346	13.0	88	--	22.5	--	8.2	94	--	--	--
07...	1350	16.0	87	--	20.5	--	4.2	46	20	--	<.10
07...	1351	20.0	88	--	19.0	--	.2	2	--	--	--
07...	1352	23.0	88	--	16.5	--	.2	2	--	--	--
07...	1353	26.0	114	--	14.0	--	.2	2	--	--	--
07...	1355	30.0	129	--	13.0	--	.2	2	28	--	<.10
07...	1356	33.0	132	--	12.5	--	.2	2	--	--	--
07...	1400	36.0	137	--	12.5	--	.2	2	51	--	<.10
October 1977											
05...	1225	1.60	111	--	16.5	2.00	8.0	82	24	--	.05
05...	1226	3.30	113	--	16.0	--	7.8	79	--	--	--
05...	1230	6.60	111	--	16.0	--	7.5	76	24	--	.04
05...	1231	9.80	113	--	16.0	--	6.9	70	--	--	--
05...	1232	13.2	115	--	15.5	--	6.9	68	--	--	--
05...	1235	16.4	115	--	15.5	--	7.0	68	25	--	.03
05...	1236	19.8	115	--	15.5	--	7.0	68	--	--	--
05...	1237	23.0	115	--	15.5	--	6.9	68	--	--	--
05...	1238	26.0	116	--	15.5	--	6.5	64	--	--	--
05...	1239	30.0	122	--	15.0	--	4.3	42	--	--	--
05...	1240	33.0	148	--	13.0	--	.0	0	30	--	.02
05...	1241	36.0	185	--	12.0	--	.0	0	--	--	--
05...	1245	37.9	186	--	12.0	--	.0	0	71	--	.01
21...	1130	1.60	90	7.1	12.5	1.80	6.9	64	23	3.5	.05
21...	1131	3.30	90	7.1	12.5	--	6.9	64	--	--	--
21...	1132	6.60	90	7.0	12.0	--	6.8	62	--	--	--
21...	1135	9.80	90	7.0	12.0	--	6.8	62	21	4.1	.01
21...	1136	13.2	90	7.0	12.0	--	6.8	62	--	--	--
21...	1137	16.0	90	7.0	12.0	--	6.7	61	--	--	--
21...	1140	19.8	90	7.0	12.0	--	6.7	61	23	4.5	.06
21...	1141	23.0	90	7.1	12.0	--	6.7	61	--	--	--
21...	1142	26.0	90	7.0	12.0	--	6.7	61	--	--	--
21...	1145	29.9	90	7.0	12.0	--	6.7	61	23	4.5	.06
21...	1146	33.0	90	7.0	12.0	--	6.7	61	--	--	--
21...	1147	36.0	90	7.0	12.0	--	6.7	61	--	--	--
21...	1150	38.0	90	7.0	12.0	--	6.7	61	23	4.5	.05
November 1977											
16...	1400	1.60	85	7.2	9.5	--	4.8	42	--	--	--
16...	1401	3.30	85	7.2	9.5	--	4.8	42	--	--	--
16...	1402	6.60	85	7.2	9.5	--	4.7	41	--	--	--
16...	1403	9.80	85	7.2	9.5	--	4.7	41	--	--	--
16...	1404	13.2	85	7.2	9.5	--	4.6	40	--	--	--
16...	1405	16.4	85	7.2	9.5	--	4.6	40	--	--	--
16...	1406	19.8	85	7.2	9.5	--	4.6	40	--	--	--
16...	1407	23.0	85	7.2	9.5	--	4.6	40	--	--	--
16...	1408	26.0	85	7.2	9.5	--	4.5	39	--	--	--
16...	1409	30.0	85	7.2	9.5	--	4.5	39	--	--	--
16...	1410	33.0	85	7.2	9.5	--	4.5	39	--	--	--
16...	1411	36.0	85	7.1	9.0	--	4.4	38	--	--	--
16...	1412	39.0	85	7.1	9.0	--	4.4	38	--	--	--
April 1978											
13...	1320	3.28	85	6.9	6.0	2.00	--	--	--	--	--
13...	1325	19.7	85	6.7	4.5	--	6.0	--	--	--	--
13...	1330	39.4	85	6.7	4.5	--	5.2	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued										
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)
April 1977										
06...	1455	1.60	.060	.44	.73	3.2	.020	.010	5.5	1.9
06...	1456	3.30	--	--	--	--	--	--	--	--
06...	1457	6.60	--	--	--	--	--	--	--	--
06...	1458	9.80	--	--	--	--	--	--	--	--
06...	1459	13.2	--	--	--	--	--	--	--	--
06...	1501	16.5	--	--	--	--	--	--	--	--
06...	1505	20.0	.060	.34	.60	2.7	.010	<.010	3.9	--
06...	1506	23.1	--	--	--	--	--	--	--	--
06...	1507	26.4	--	--	--	--	--	--	--	--
06...	1508	30.0	--	--	--	--	--	--	--	--
06...	1509	33.0	--	--	--	--	--	--	--	--
06...	1510	36.3	--	--	--	--	--	--	--	--
06...	1515	38.0	.070	.43	.71	3.1	.010	<.010	5.1	--
06...	1516	39.0	--	--	--	--	--	--	--	--
27...	1540	1.60	.040	.56	.60	2.7	.020	<.010	--	--
27...	1541	3.30	--	--	--	--	--	--	--	--
27...	1545	6.60	.050	.38	.44	1.9	.030	<.010	--	--
27...	1546	9.80	--	--	--	--	--	--	--	--
27...	1547	13.2	--	--	--	--	--	--	--	--
27...	1550	15.0	.050	.48	.55	2.4	.020	<.010	--	--
27...	1551	16.5	--	--	--	--	--	--	--	--
27...	1552	20.0	--	--	--	--	--	--	--	--
27...	1553	23.1	--	--	--	--	--	--	--	--
27...	1554	26.4	--	--	--	--	--	--	--	--
27...	1555	30.0	--	--	--	--	--	--	--	--
27...	1556	33.0	--	--	--	--	--	--	--	--
27...	1557	36.3	--	--	--	--	--	--	--	--
27...	1600	38.0	.190	.53	.79	3.5	.040	<.010	--	--
May 1977										
04...	1325	40.0	--	--	--	--	--	--	--	--
17...	1225	1.60	.020	.26	.28	1.2	.010	<.010	--	--
17...	1226	3.30	--	--	--	--	--	--	--	--
17...	1230	6.60	.060	.36	.42	1.9	.020	<.010	--	--
17...	1231	9.80	--	--	--	--	--	--	--	--
17...	1235	11.0	.050	.52	.57	2.5	.020	<.010	--	--
17...	1236	13.2	--	--	--	--	--	--	--	--
17...	1237	16.5	--	--	--	--	--	--	--	--
17...	1238	20.0	--	--	--	--	--	--	--	--
17...	1239	23.1	--	--	--	--	--	--	--	--
17...	1240	26.4	--	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued										
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)	Algal growth poten- tial, bottle test (mg/L)
May 1977										
17...	1241	30.0	--	--	--	--	--	--	--	--
17...	1242	33.0	--	--	--	--	--	--	--	--
17...	1243	36.3	--	--	--	--	--	--	--	--
17...	1245	38.0	.210	.35	.58	2.6	.040	<.010	--	--
June 1977										
14...	1315	1.60	.030	.27	.30	1.3	.010	<.010	--	--
14...	1316	3.30	--	--	--	--	--	--	--	--
14...	1318	6.60	--	--	--	--	--	--	--	--
14...	1320	9.80	.100	.57	.67	3.0	.030	<.010	--	--
14...	1322	13.2	--	--	--	--	--	--	--	--
14...	1323	16.5	--	--	--	--	--	--	--	--
14...	1325	19.7	.090	.32	.41	1.8	.020	<.010	--	--
14...	1327	23.1	--	--	--	--	--	--	--	--
14...	1329	26.4	--	--	--	--	--	--	--	--
14...	1330	30.0	--	--	--	--	--	--	--	--
14...	1332	33.0	--	--	--	--	--	--	--	--
14...	1333	36.3	--	--	--	--	--	--	--	--
14...	1335	37.7	.300	.34	.64	2.8	.090	.020	--	--
July 1977										
11...	1340	1.60	.040	.32	.36	1.6	.020	--	--	--
11...	1342	3.30	--	--	--	--	--	--	--	--
11...	1344	6.60	--	--	--	--	--	--	--	--
11...	1345	9.80	.050	.52	.57	2.5	.020	--	--	--
11...	1347	13.0	--	--	--	--	--	--	--	--
11...	1349	16.0	--	--	--	--	--	--	--	--
11...	1350	20.0	.090	.29	.38	1.7	.020	--	--	--
11...	1352	23.0	--	--	--	--	--	--	--	--
11...	1353	26.0	--	--	--	--	--	--	--	--
11...	1354	30.0	--	--	--	--	--	--	--	--
11...	1355	33.0	.840	.76	1.6	7.1	.390	--	--	--
11...	1357	36.0	--	--	--	--	--	--	--	--
11...	1400	38.0	.040	.38	.42	1.9	.020	--	--	--
August 1977										
05...	1115	1.60	.020	.62	.65	2.9	.020	--	6.2	2.6
05...	1116	3.30	--	--	--	--	--	--	--	--
05...	1118	6.60	--	--	--	--	--	--	--	--
05...	1119	9.80	--	--	--	--	--	--	--	--
05...	1120	13.0	.020	.50	.52	2.3	.040	--	4.5	--
05...	1122	16.0	--	--	--	--	--	--	--	--
05...	1125	20.0	.020	.39	.41	1.8	.030	--	4.5	--
05...	1127	23.0	--	--	--	--	--	--	--	--
05...	1128	26.0	--	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued							
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)
August 1977							
05...	1129	30.0	--	--	--	--	--
05...	1130	33.0	1.40	1.1	2.5	11	.480
05...	1133	36.0	--	--	--	--	--
05...	1135	38.0	1.80	.90	2.7	12	.650
September 1977							
07...	1340	1.60	.010	.34	.35	1.6	.020
07...	1341	3.30	--	--	--	--	--
07...	1342	6.60	--	--	--	--	--
07...	1345	9.80	.060	.31	.47	2.1	.040
07...	1346	13.0	--	--	--	--	--
07...	1350	16.0	.020	.34	.36	1.6	.030
07...	1351	20.0	--	--	--	--	--
07...	1352	23.0	--	--	--	--	--
07...	1353	26.0	--	--	--	--	--
07...	1355	30.0	.510	.37	.88	3.9	.170
07...	1356	33.0	--	--	--	--	--
07...	1400	36.0	2.10	.50	2.6	12	.640
October 1977							
05...	1225	1.60	.150	.47	.67	3.0	.050
05...	1226	3.30	--	--	--	--	--
05...	1230	6.60	.150	.48	.67	3.0	.030
05...	1231	9.80	--	--	--	--	--
05...	1232	13.2	--	--	--	--	--
05...	1235	16.4	.140	.47	.64	2.8	.040
05...	1236	19.8	--	--	--	--	--
05...	1237	23.0	--	--	--	--	--
05...	1238	26.0	--	--	--	--	--
05...	1239	30.0	--	--	--	--	--
05...	1240	33.0	.500	.60	1.1	5.0	.130
05...	1241	36.0	--	--	--	--	--
05...	1245	37.9	3.30	1.0	4.3	19	1.10
21...	1130	1.60	.200	.48	.73	3.2	.030
21...	1131	3.30	--	--	--	--	--
21...	1132	6.60	--	--	--	--	--
21...	1135	9.80	.090	.32	.42	1.9	.030
21...	1136	13.2	--	--	--	--	--
21...	1137	16.0	--	--	--	--	--
21...	1140	19.8	.210	.72	.99	4.4	.040
21...	1141	23.0	--	--	--	--	--
21...	1142	26.0	--	--	--	--	--
21...	1145	29.9	.210	.49	.76	3.4	.030
21...	1146	33.0	--	--	--	--	--
21...	1147	36.0	--	--	--	--	--
21...	1150	38.0	.200	.70	.95	4.2	.030
November 1977							
16...	1400	1.60	--	--	--	--	--
16...	1401	3.30	--	--	--	--	--
16...	1402	6.60	--	--	--	--	--
16...	1403	9.80	--	--	--	--	--
16...	1404	13.2	--	--	--	--	--
16...	1405	16.4	--	--	--	--	--
16...	1406	19.8	--	--	--	--	--
16...	1407	23.0	--	--	--	--	--
16...	1408	26.0	--	--	--	--	--
16...	1409	30.0	--	--	--	--	--
16...	1410	33.0	--	--	--	--	--
16...	1411	36.0	--	--	--	--	--
16...	1412	39.0	--	--	--	--	--
April 1978							
13...	1320	3.28	--	--	--	--	.020
13...	1325	19.7	--	--	--	--	.021
13...	1330	39.4	--	--	--	--	.015

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued

Phytoplankton analyses										
DATE TIME	APR 6,77 1455	APR 27,77 1200	APR 27,77 1540	MAY 17,77 1225	JUL 11,77 1340					
DIVERSITY: DIVISION	0.9	0.9	0.9	1.6	0.3					
..CLASS	0.9	0.9	0.9	1.6	0.3					
...ORDER	1.6	1.6	0.9	1.6	1.3					
...FAMILY	1.6	1.6	1.6	1.6	1.7					
...GENUS	1.6	1.6	1.6	1.6	2.2					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
....MICRACTINIACEAE										
....MICRACTINIUM	--	-	# 33		*	0	--	-	--	-
....OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	*	0	# 33		--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	450	3
....NEPHROCYTIUM	--	-	--	-	--	-	*	0	--	-
....SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	240	2
....SCENEDESMUS	--	-	--	-	*	0	--	-	--	-
....TETRASTRUM	--	-	*	0	--	-	--	-	--	-
....ZYGNEATALES										
....DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	*	0	--	-
....COSMARIUM	--	-	*	0	--	-	--	-	--	-
....STAURASTRUM	--	-	--	-	--	-	--	-	*	0
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISACEAE										
....CYCLOTELLA	# 33		*	0	*	0	*	0	--	-
....MELOSIRA	--	-	# 33		--	-	*	0	--	-
....STEPHANODISCUS	--	-	*	0	--	-	*	0	--	-
...PENNALES										
....FRAGILARIACEAE										
....ASTERIONELLA	# 33		# 33		# 33		# 33		--	-
....SYNEDRA	--	-	*	0	--	-	*	0	--	-
....NITZSCHIA										
....NITZSCHIA	--	-	--	-	--	-	*	0	--	-
....TABELLARIACEAE										
....TABELLARIA	--	-	*	0	--	-	--	-	--	-
..CHRYSTOPHYCEAE										
...CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....AGMONELLUM	--	-	--	-	--	-	--	-	510	3
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-
...HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	*	0	1400	9
....APHANIZOMENON	--	-	*	0	# 33		*	0	--	-
...OSCILLATORIACEAE										
....ARTHROSPIRA	--	-	--	-	--	-	--	-	160	1
....OSCILLATORIA	# 33		--	-	# 33		# 33		5400#	35
....PHORMIDIUM	--	-	--	-	--	-	--	-	1300	9
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	5800#	37
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	*	0	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	--	-	*	0	*	0	*	0	110	1
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
...CERATIACEAE										
....CERATIUM	--	-	--	-	--	-	--	-	*	0
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-
...PERIDINIACEAE										
....PERIDINIUM	--	-	*	0	--	-	--	-	--	-

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L14--Continued

Phytoplankton analyses

DATE TIME	AUG 5.77 1115	AUG 17.77 1206	SEP 7.77 1340	OCT 5.77 1225				
DIVERSITY: DIVISION	0.0	0.9	0.0	1.6				
..CLASS	0.0	0.9	0.0	1.6				
...ORDER	0.9	1.6	1.0	1.6				
...FAMILY	0.9	1.6	1.5	1.6				
....GENUS	1.6	1.6	2.0	1.6				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	* 0	--	--	--	--	--	--	--
...MICRACTINIACEAE								
....MICRACTINIUM	--	--	--	--	--	--	--	--
...OOCYSTACEAE								
....ANKISTRODESMUS	* 0	--	--	--	--	--	--	--
...CHODATELLA	--	--	--	--	--	--	--	--
...DICTYOSPHAERIUM	--	--	--	--	--	--	--	--
...NEPHROCYTIUM	--	--	--	--	--	--	--	--
...SCENEDESMACEAE								
....CRUCIGENIA	--	--	--	--	--	--	--	--
....SCENEDESMUS	--	--	--	--	--	--	--	--
....TETRASTRUM	--	--	--	--	--	--	--	--
...ZYGNEMATALES								
...DESMIDIACEAE								
...CLOSTERIUM	--	--	--	--	--	--	--	--
...COSMARIUM	* 0	--	--	--	--	--	--	--
...STAUSTRUM	* 0	--	--	--	--	--	--	--
CHRYSOPHYTA								
..RACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCEACEAE								
...CYCLOTELLA	--	--	--	--	--	--	--	--
...MELOSIRA	* 0	--	--	--	--	--	--	--
...STEPHANODISCUS	--	--	--	--	--	--	--	--
...PENNALES								
...FRAGILARIACEAE								
...ASTERIONELLA	--	--	--	--	--	--	--	--
...SYNEDRA	--	--	--	--	--	--	--	--
...NITZSCHACEAE								
...NITZSCHIA	--	--	--	--	--	--	--	--
...TABELLARIACEAE								
...TABELLARIA	--	--	--	--	--	--	--	--
..CHRYSOPHYCEAE								
...CHRYSONOMADALES								
...OCHROMONADACEAE								
...DINOBRYON	* 0	--	--	--	--	--	# 33	--
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCCOCCALES								
...CHROCCOCCACEAE								
....AGMENELLUM	# 33	--	--	# 25	--	--	--	--
....ANACYSTIS	* 0	--	--	--	--	--	--	--
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	* 0	# 33	--	--	--	--	--	--
....APHANIZOMENON	* 0	--	--	# 25	--	--	--	--
...OSCILLATORIACEAE								
....ARTHROSPIRA	--	--	--	--	--	--	--	--
....OSCILLATORIA	# 33	--	--	# 25	--	--	--	--
...PHORMIDIUM	--	--	--	--	--	--	--	--
...CHROCCOCCALES								
...CHROCCOCCACEAE								
...GOMPHOSPHAERIA	# 33	# 33	# 25	# 33				
EUGLENOPHYTA (EUGLENOIDS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
...CRYPTOCHRYSIDACEAE								
...CHROOMONAS	--	--	--	--	--	--	--	--
...CRYPTOMONODACEAE								
...CRYPTOMONAS	--	--	--	--	--	--	--	--
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	--	--	--	--	--	--	--
...TRACHELOMONAS	* 0	# 33	--	--	--	--	# 33	--
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
...CERATIACEAE								
...CERATIUM	--	--	--	--	--	--	--	--
...GLENODINIACEAE								
...GLENODINIUM	--	--	--	--	--	--	--	--
...PERIDINIACEAE								
...PERIDINIUM	--	--	--	--	--	--	--	--

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L15							
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature ($^{\circ}$ C)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)
April 1977							
06...	1515	1.60	76	8.1	5.0	14.0	112
06...	1516	3.30	76	8.1	5.0	13.9	111
06...	1517	6.60	76	8.1	5.0	13.9	111
06...	1518	9.80	76	8.1	5.0	13.8	111
06...	1519	13.2	76	8.1	5.0	13.8	111
06...	1520	16.5	76	8.1	5.0	13.8	111
06...	1521	20.0	76	8.1	5.0	13.7	111
06...	1522	23.1	76	8.1	5.0	13.7	111
06...	1523	26.4	76	8.1	5.0	13.7	111
06...	1524	30.0	76	8.0	5.0	13.7	111
06...	1525	31.4	76	8.0	5.0	13.6	111
27...	1615	1.60	86	8.9	12.0	12.8	119
27...	1616	3.30	86	8.9	11.5	12.8	117
27...	1617	6.60	83	8.5	10.5	12.0	107
27...	1618	9.80	83	8.4	10.0	11.9	105
27...	1619	13.2	84	8.6	10.0	12.0	106
27...	1620	16.5	83	7.6	9.5	11.4	99
27...	1621	20.0	83	7.0	9.0	11.0	95
27...	1622	23.1	83	6.8	8.5	10.4	88
27...	1623	26.4	83	6.8	8.5	10.1	86
27...	1624	30.0	84	6.9	8.5	9.2	80
May 1977							
17...	1250	1.60	91	8.4	17.5	11.8	123
17...	1251	3.30	91	8.5	16.0	12.1	122
17...	1252	6.60	90	8.7	15.0	12.4	122
17...	1253	9.80	88	8.2	13.5	12.0	114
17...	1254	13.2	88	7.2	13.0	11.1	105
17...	1255	16.5	88	7.0	13.0	10.6	100
17...	1256	20.0	88	6.8	13.0	10.1	95
17...	1257	23.1	87	6.7	12.5	9.4	87
17...	1258	26.4	87	6.8	12.5	9.3	87
June 1977							
14...	1350	1.60	91	7.4	19.5	10.3	110
14...	1352	3.30	91	7.4	18.5	10.4	110
14...	1354	6.60	90	7.4	17.5	10.4	107
14...	1356	9.80	90	7.4	17.0	10.3	106
14...	1358	13.2	90	7.3	16.5	9.5	97
14...	1400	16.5	95	7.3	16.0	8.6	87
14...	1402	20.0	95	7.3	15.5	6.8	67
14...	1404	23.1	95	7.3	14.5	2.5	24
14...	1406	26.4	95	7.3	13.5	.0	0
14...	1408	28.1	97	7.2	13.0	.0	0

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16												
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved (per- cent satur- ation)	Bicar- bonate FET-Fld (mg/L as HCO ₃)	Alka- linity field (mg/L as CACO ₃)	Carbon dioxide dis- solved (mg/L as CO ₂)	Nitro- gen, NO ₂ +NO ₃ total (mg/L as N)
April 1977												
06...	1530	1.60	76	8.0	5.0	1.30	14.1	110	20	16	.3	.21
06...	1531	3.30	76	8.0	5.0	--	14.0	109	--	--	--	--
06...	1535	6.60	76	8.0	5.0	--	14.0	109	19	16	.3	.21
06...	1536	9.80	76	8.0	5.0	--	14.0	109	--	--	--	--
06...	1540	11.0	--	--	--	--	--	--	19	16	--	.21
06...	1541	13.0	77	8.1	5.0	--	13.9	109	--	--	--	--
27...	1630	1.60	85	8.9	11.5	1.60	12.9	118	21	17	.0	<.10
27...	1633	3.30	84	8.9	11.0	--	12.8	116	--	--	--	--
27...	1635	6.60	84	8.9	10.5	--	12.6	113	19	16	.0	.01
27...	1637	9.80	83	8.8	10.5	--	12.5	112	--	--	--	--
27...	1640	11.6	82	8.7	10.0	--	12.2	108	20	16	.0	.01
May 1977												
04...	1350	10.0	--	--	--	--	--	--	--	--	--	--
17...	1310	1.60	91	8.5	17.5	2.00	11.8	123	24	20	.1	<.10
17...	1311	3.30	91	8.5	17.5	--	11.9	124	--	--	--	--
17...	1315	4.90	--	--	--	--	--	--	23	19	--	<.10
17...	1316	6.60	89	8.6	15.0	--	12.2	120	--	--	--	--
17...	1320	9.80	88	7.8	14.0	--	11.2	108	24	20	.6	<.10
June 1977												
14...	1405	1.60	92	7.3	19.0	4.0	10.2	109	--	19	1.8	<.10
14...	1407	3.30	92	7.3	18.5	--	10.1	107	--	--	--	--
14...	1410	8.20	91	7.3	18.0	--	10.0	105	--	18	1.7	<.10
14...	1412	9.80	91	7.2	17.0	--	8.4	87	--	--	--	--
14...	1415	11.5	90	7.2	17.0	--	8.7	90	--	18	2.2	<.10
July 1977												
11...	1420	1.60	97	7.9	24.0	2.70	10.6	125	--	19	.5	<.10
11...	1422	3.30	97	7.9	24.0	--	10.8	127	--	--	--	--
11...	1424	6.60	96	7.9	23.5	--	10.0	114	--	--	--	--
11...	1425	7.40	--	--	--	--	--	--	--	19	--	<.10
11...	1427	9.80	94	7.7	23.0	--	8.8	101	--	--	--	--
11...	1430	13.0	94	7.7	21.5	--	6.2	70	--	19	.7	.01
August 1977												
05...	1125	--	--	--	--	--	--	5	--	--	--	--
05...	1200	1.60	96	7.5	24.5	2.60	9.2	109	--	20	1.2	<.10
05...	1203	3.30	96	7.5	24.5	--	9.2	109	--	--	--	--
05...	1205	6.60	96	7.1	24.0	--	9.2	108	--	19	2.9	<.10
05...	1207	9.80	96	7.0	24.0	--	9.0	106	--	--	--	--
05...	1210	11.0	95	6.9	23.0	--	6.8	78	--	19	4.6	<.10
September 1977												
07...	1405	1.60	90	--	24.0	>2.50	8.6	101	--	20	--	<.10
07...	1406	3.30	90	--	24.0	--	8.6	101	--	--	--	--
07...	1410	4.10	--	--	--	--	--	--	--	20	--	.00
07...	1415	6.60	90	--	24.0	--	8.6	101	--	20	--	.00
October 1977												
05...	1255	1.60	109	--	16.5	2.00	7.8	79	--	24	--	.03

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16--Continued											
Date	Time	Sam- pling depth (ft)	Spe- cific con- duct- ance (μ S/cm)	pH (stand- ard units)	Temper- ature (°C)	Trans- par- ency (secchi disk) (m)	Oxygen, dis- solved (mg/L)	Oxygen, dis- solved satur- ation	Alka- linity field (mg/L as CAC03)	Carbon dioxide dis- solved (mg/L as C02)	Nitro- gen, NO2+NO3 total (mg/L as N)
October 1977											
05...	1256	3.30	111	--	16.0	--	7.9	80	--	--	--
05...	1300	5.70	--	--	--	--	--	--	24	--	.03
05...	1301	6.60	111	--	16.0	--	7.8	79	--	--	--
05...	1305	9.80	111	--	16.0	--	7.7	78	24	--	.03
21...	1155	1.60	92	7.1	12.5	1.80	7.1	66	23	3.5	.06
21...	1156	3.30	92	7.1	12.5	--	7.1	66	--	--	--
21...	1200	5.70	--	--	--	--	--	--	24	--	.06
21...	1201	6.60	92	7.1	12.5	--	7.1	66	--	--	--
21...	1205	9.80	92	7.1	12.0	--	7.0	64	23	3.5	.06
November 1977											
16...	1410	1.60	85	7.2	9.5	--	4.7	40	--	--	--
16...	1411	3.30	85	7.2	9.5	--	4.6	39	--	--	--
16...	1412	6.60	85	7.2	9.5	--	4.6	39	--	--	--
16...	1413	9.80	85	7.2	9.5	--	4.6	39	--	--	--
16...	1414	13.2	85	7.2	9.5	--	4.9	44	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16--Continued									
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO3)	Phos- phorus, total (mg/L as P)	Phos- phorus, ortho, total (mg/L as P)	Carbon, organic total (mg/L as C)
April 1977									
06...	1530	1.60	.060	.34	.61	2.7	.020	<.010	4.1
06...	1531	3.30	--	--	--	--	--	--	--
06...	1535	6.60	.080	.32	.61	2.7	.020	<.010	--
06...	1536	9.80	--	--	--	--	--	--	--
06...	1540	11.0	.070	.43	.71	3.1	.020	<.010	4.0
06...	1541	13.0	--	--	--	--	--	--	--
27...	1630	1.60	.040	.48	.52	2.3	.020	<.010	--
27...	1633	3.30	--	--	--	--	--	--	--
27...	1635	6.60	.040	.39	.44	1.9	.020	<.010	--
27...	1637	9.80	--	--	--	--	--	--	--
27...	1640	11.6	.050	.49	.55	2.4	.020	<.010	--
May 1977									
04...	1350	10.0	--	--	--	--	--	--	--
17...	1310	1.60	.010	.36	.37	1.6	.010	<.010	--
17...	1311	3.30	--	--	--	--	--	--	--
17...	1315	4.90	.010	.39	.40	1.8	.010	<.010	--
17...	1316	6.60	--	--	--	--	--	--	--
17...	1320	9.80	.050	.44	.49	2.2	.030	<.010	--
June 1977									
14...	1405	1.60	.030	.27	.30	1.3	.010	<.010	--
14...	1407	3.30	--	--	--	--	--	--	--
14...	1410	8.20	.080	.28	.36	1.6	.030	<.010	--
14...	1412	9.80	--	--	--	--	--	--	--
14...	1415	11.5	.080	.30	.38	1.7	.040	<.010	--
July 1977									
11...	1420	1.60	.030	.58	.61	2.7	.020	--	--
11...	1422	3.30	--	--	--	--	--	--	--
11...	1424	6.60	--	--	--	--	--	--	--
11...	1425	7.40	.060	.42	.48	2.1	.020	--	--
11...	1427	9.80	--	--	--	--	--	--	--
11...	1430	13.0	.070	.64	.72	3.2	.030	--	--
August 1977									
05...	1200	1.60	.010	.41	.42	1.9	.020	--	1.8
05...	1203	3.30	--	--	--	--	--	--	--
05...	1205	6.60	.010	.56	.57	2.5	.020	--	6.7
05...	1207	9.80	--	--	--	--	--	--	--
05...	1210	11.0	.020	.58	.60	2.7	.020	--	9.6
September 1977									
07...	1405	1.60	.010	.36	.37	1.6	.020	--	--
07...	1406	3.30	--	--	--	--	--	--	--
07...	1410	4.10	.020	.31	.34	1.5	.020	--	--
07...	1415	6.60	.030	.32	.36	1.6	.040	--	--
October 1977									
05...	1255	1.60	.120	.32	.47	2.1	.060	--	--
05...	1256	3.30	--	--	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16--Continued							
Date	Time	Sam- pling depth (ft)	Nitro- gen, ammonia dis- solved (mg/L as N)	Nitro- gen, organic total (mg/L as N)	Nitro- gen, total (mg/L as N)	Nitro- gen, total (mg/L as NO ₃)	Phos- phorus, total (mg/L as P)
October 1977							
05...	1300	5.70	.140	.47	.64	2.8	.080
05...	1301	6.60	--	--	--	--	--
05...	1305	9.80	.130	.46	.62	2.7	.120
21...	1155	1.60	.200	.57	.83	3.7	.030
21...	1156	3.30	--	--	--	--	--
21...	1200	5.70	.180	.64	.88	3.9	.030
21...	1201	6.60	--	--	--	--	--
21...	1205	9.80	.200	.51	.77	3.4	.040
November 1977							
16...	1410	1.60	--	--	--	--	--
16...	1411	3.30	--	--	--	--	--
16...	1412	6.60	--	--	--	--	--
16...	1413	9.80	--	--	--	--	--
16...	1414	13.2	--	--	--	--	--

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16--Continued

Phytoplankton analyses

DATE TIME.	APR 6+77 1530	APR 27+77 1200	APR 27+77 1630	MAY 17+77 1310	JUN 14+77 1405	JUL 11+77 1420				
DIVERSITY: DIVISION	0.9	0.9	0.0	1.0	1.0	0.7				
..CLASS	0.9	0.9	0.0	1.0	1.0	0.7				
...ORDER	1.6	1.6	0.0	1.0	1.5	1.6				
...FAMILY	1.6	1.6	0.0	1.0	1.5	2.0				
....GENUS	1.6	1.6	0.0	1.0	2.0	2.0				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	*	0	*	0
....COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
....MICRACINIAEAE										
....MICRACINIUM	--	-	*	0	--	-	*	0	--	-
....OOCYSTACEAE										
....CHODATELLA	--	-	--	-	--	-	*	0	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	*	0	1300	13
....TETRAEDRON	*	0	--	-	--	-	*	0	--	-
....SCENEDESMACEAE										
....SCENEDESMUS	--	-	*	0	--	-	*	0	--	-
....TETRASTRUM	--	-	*	0	--	-	--	-	--	-
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-
...ZYGNEMATALES										
...DESMIDIACEAE										
...COSMARIUM	--	-	--	-	--	-	--	-	*	0
...STAUSTRUM	--	-	--	-	--	-	*	0	*	0
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINDISCACEAE										
....CYCLOTELLA	#	33	*	0	--	-	*	0	--	-
....MELOSIRA	*	0	*	0	--	-	*	0	--	-
...PENNALES										
...FRAGILARIACEAE										
....ASTERIONELLA	#	33	#	33	#	100	#	50	#	25
...FRAGILARIA	*	0	--	-	--	-	--	-	#	25
....SYNEDRA	--	-	*	0	--	-	*	0	--	-
...NITZSCHIAEAE										
....NITZSCHIA	*	0	--	-	--	-	--	-	--	-
...TABELLARIACEAE										
....TABELLARIA	--	-	*	0	--	-	*	0	--	-
..CHRYSTOPHYCEAE										
...CHRYSONOMADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCCOCCALES										
...CHROCCOCCAEAE										
....ANACYSTIS	--	-	#	33	--	-	--	-	#	25
...HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	#	25
....APHANIZOMENON	*	0	#	33	--	-	*	0	--	-
...OSCILLATORIAEAE										
....OSCILLATORIA	#	33	--	-	--	-	#	50	--	-
...CHROCCOCCALES										
...CHROCCOCCAEAE										
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	*	0
									3800#	37
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	*	0	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....TRACHELOMONAS	--	-	--	-	--	-	*	0	*	0
									68	1
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
...CERATIACEAE										
....CERATIUM	--	-	--	-	--	-	--	-	*	0
...GLENODINTIACEAE									130	1
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-

* = Present in sample but not a dominant type.

= A dominant type in sample.

Table 11.--Chemical, physical, and biological characteristics of lake water--Continued

Lake site L16--Continued

DATE TIME	Phytoplankton analyses									
	AUG 5,77 1200	AUG 17,77 1215	SEP 7,77 1405	OCT 5,77 1255	OCT 21,77 1155					
DIVERSITY: DIVISION	0.0	0.8	0.0	1.6	0.9					
..CLASS	0.0	0.8	0.0	1.6	0.9					
...ORDER	0.9	1.5	1.0	1.6	1.6					
....FAMILY	0.9	1.5	1.0	1.6	1.6					
.....GENUS	1.6	2.0	2.0	1.6	1.6					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
....COELASTRACEAE										
....COELASTRUM	*	0	--	-	--	-	--	-	--	-
....MICRACTINIACEAE										
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
....OOCYSTACEAE										
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	*	0	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
....SCENEDESMACEAE										
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	*	0	--	-	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....COSMARIUM	*	0	--	-	--	-	--	-	--	-
....STAUSTRUM	*	0	--	-	--	-	--	-	--	-
CHRYSTOPHYTA										
..RACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCAEAE										
....CYCLOTELLA	--	-	--	-	--	-	--	-	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	#	33
..PENNALES										
...FRAGILARIACEAE										
....ASTERIONELLA	*	0	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIAEAE										
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-
...TABELLARIAEAE										
....TABELLARIA	--	-	--	-	--	-	--	-	#	33
..CHRYSTOPHYCEAE										
...CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	#	33	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
....ANACYSTIS	#	33	--	-	#	25	--	-	--	-
...HORMOGONIALES										
...NOSTOCACEAE										
....ANABAENA	#	33	#	25	#	25	--	-	--	-
....APHANIZOMENON	--	-	#	25	#	25	--	-	--	-
...OSCILLATORIAEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
...CHROCOCCALES										
...CHROCOCCACEAE										
....GOMPHOSPHAERIA	#	33	#	25	#	25	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
....CHRODOMONAS	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEAE										
....TRACHELOMONAS	*	0	#	25	--	-	#	33	#	33
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
...CEPATIACEAE										
....CERATIUM	--	-	--	-	--	-	#	33	--	-
...GLENODINIAEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

* = Present in sample but not a dominant type.

= A dominant type in sample.